

New 7 blinks
Troubleshooting
Procedure

Applies to models:

TC-P42X1
TC-P50X1
TC-P42C1
TC-P50C1
TC-P42S1
TC-P46S1
TC-P50S1
TC-P54S1
TC-P42U1
TC-P46U1
TC-P50U1
TC-P42G10
TC-P46G10
TC-P50G10
TC-P54G10
TC-P42G15
TC-P46G15
TC-P50G15
TC-42PS14
TC-50PS14
TC-P50V10
TC-P54V10

Revised Troubleshooting Handbook

2009-Plasma HD and FHD TV (12th Generation)



Model TC-P42PX1

Panasonic Service and Technology Company
National Training

Prepared by
Cesar Perdomo
Panasonic Service and Technology Company
National Training

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 Warning

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Introduction

1. Basic concept of how to determine the defective board

1) Verification of voltages

Normally, when there is a power problem, shutdown occurs immediately.

So, to resolve a power problem, voltage checks are necessary before shutdown.

2) Check if the power comes up after disconnecting the board under suspicion.

If power comes up (*) after disconnecting a board, the board is defective.

(*) “Power comes up” equals “no shutdown”.

2. Troubleshooting Video and Audio problems

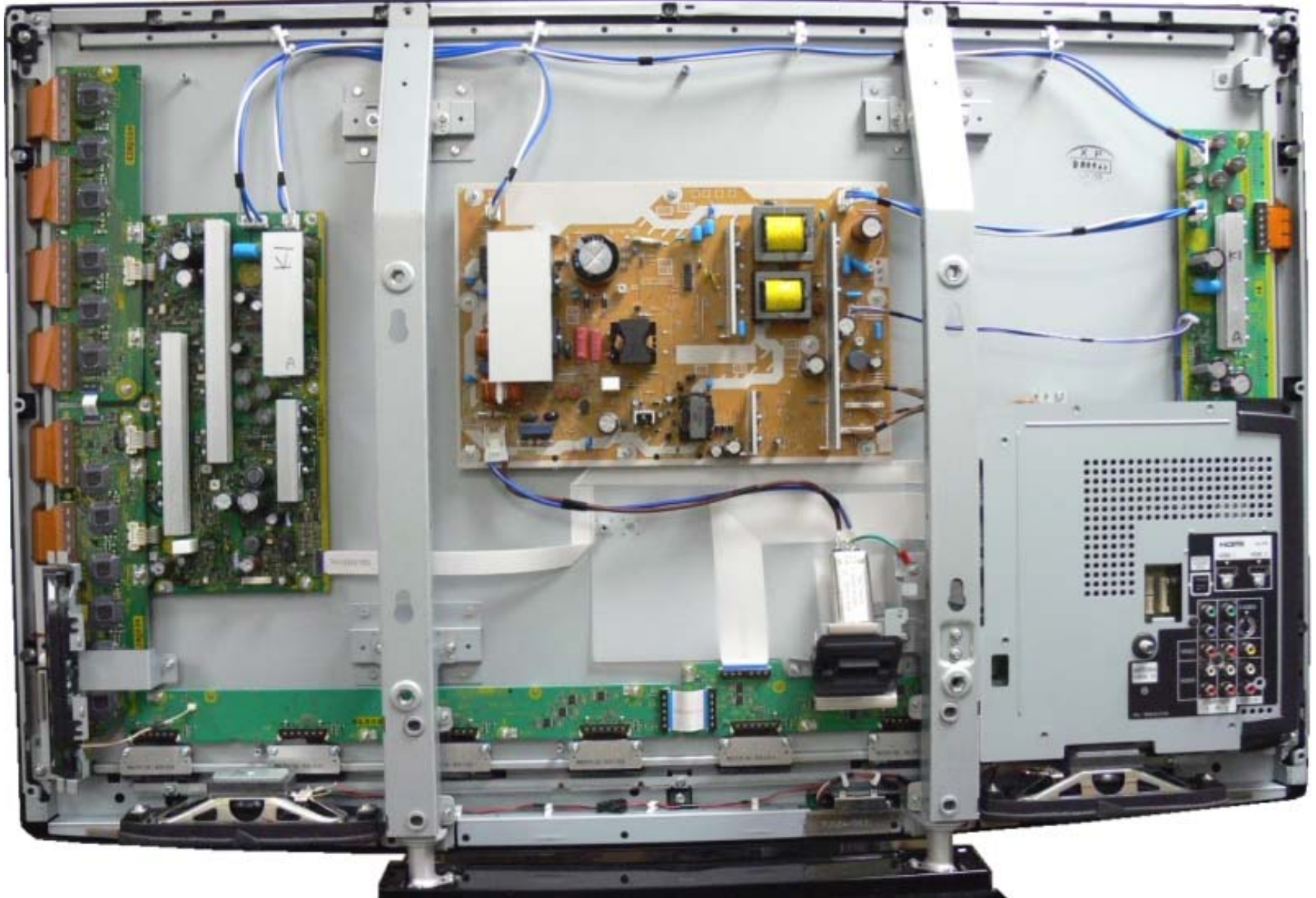
3. Examples of video problems

4. Adjustment after PCB exchange

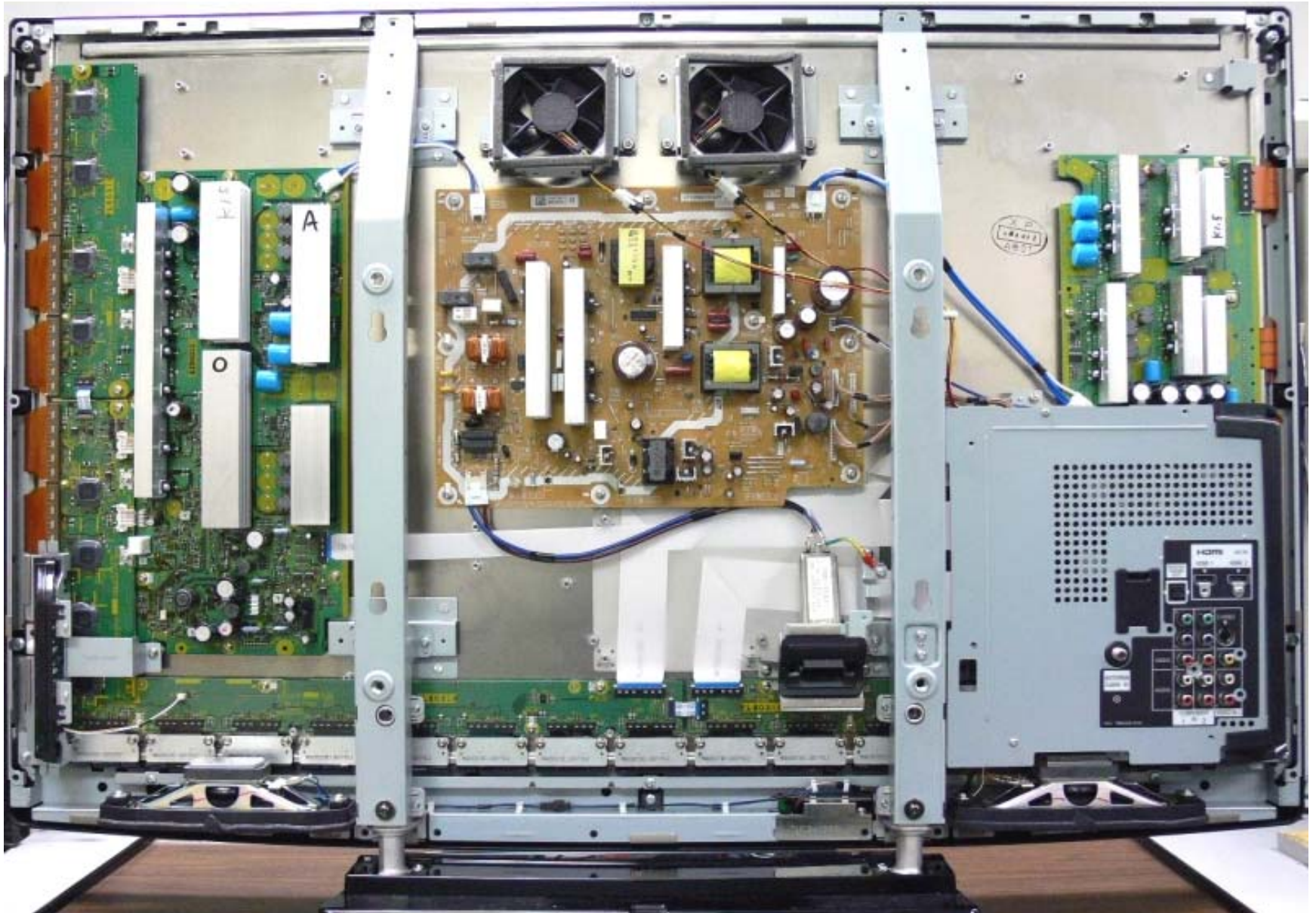
1) After exchanging the following boards, voltage adjustment is required.

P board, SC board, SS board => Please refer to the “Service Manual”.

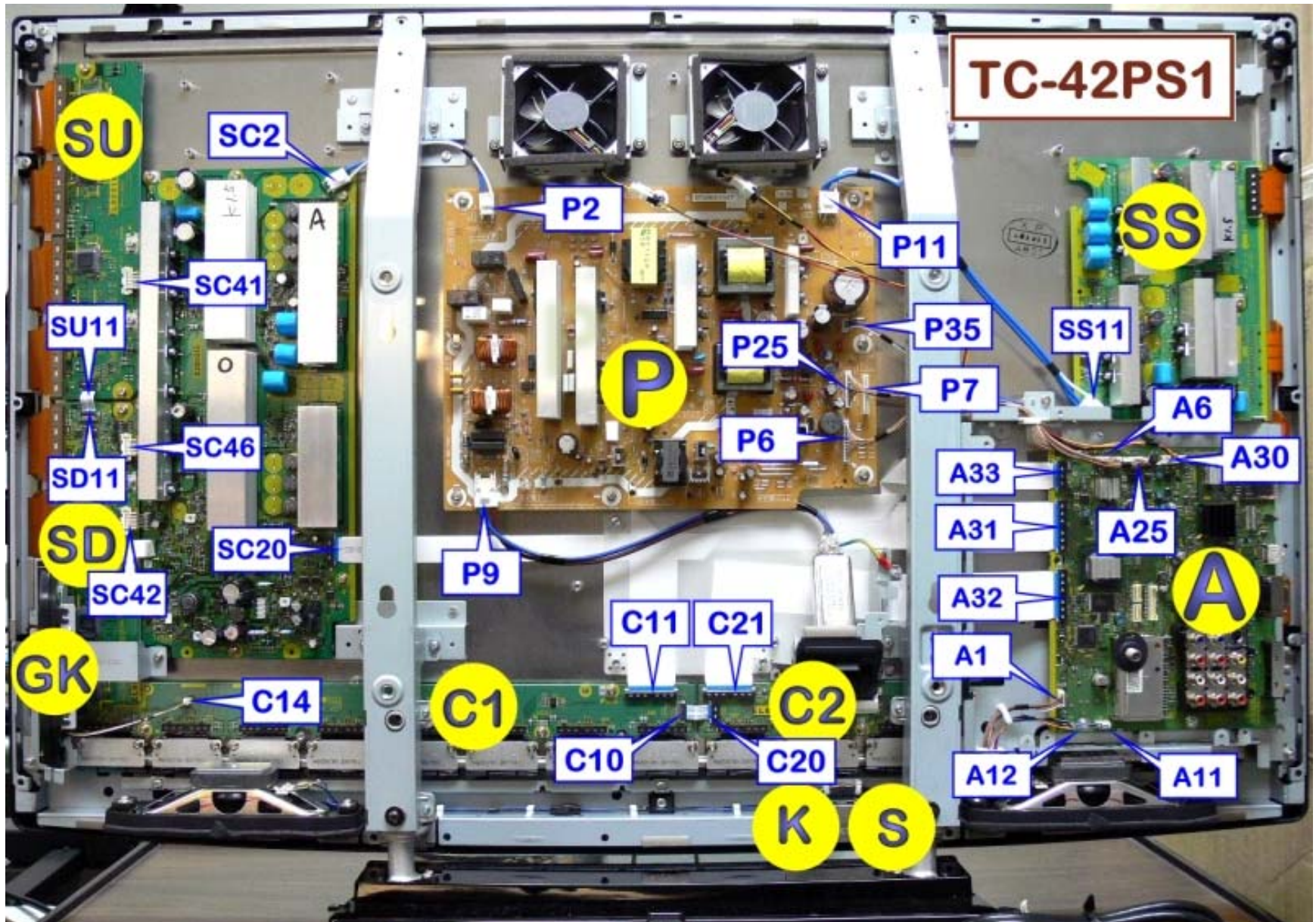
HD boards Layout (TC-P42X1)



Full-HD boards Layout (TC-P42S1)



Full-HD Connector's Location (TC-P42S1)



Troubleshooting Shutdown Problems

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Power LED's Response to Shutdown Operation

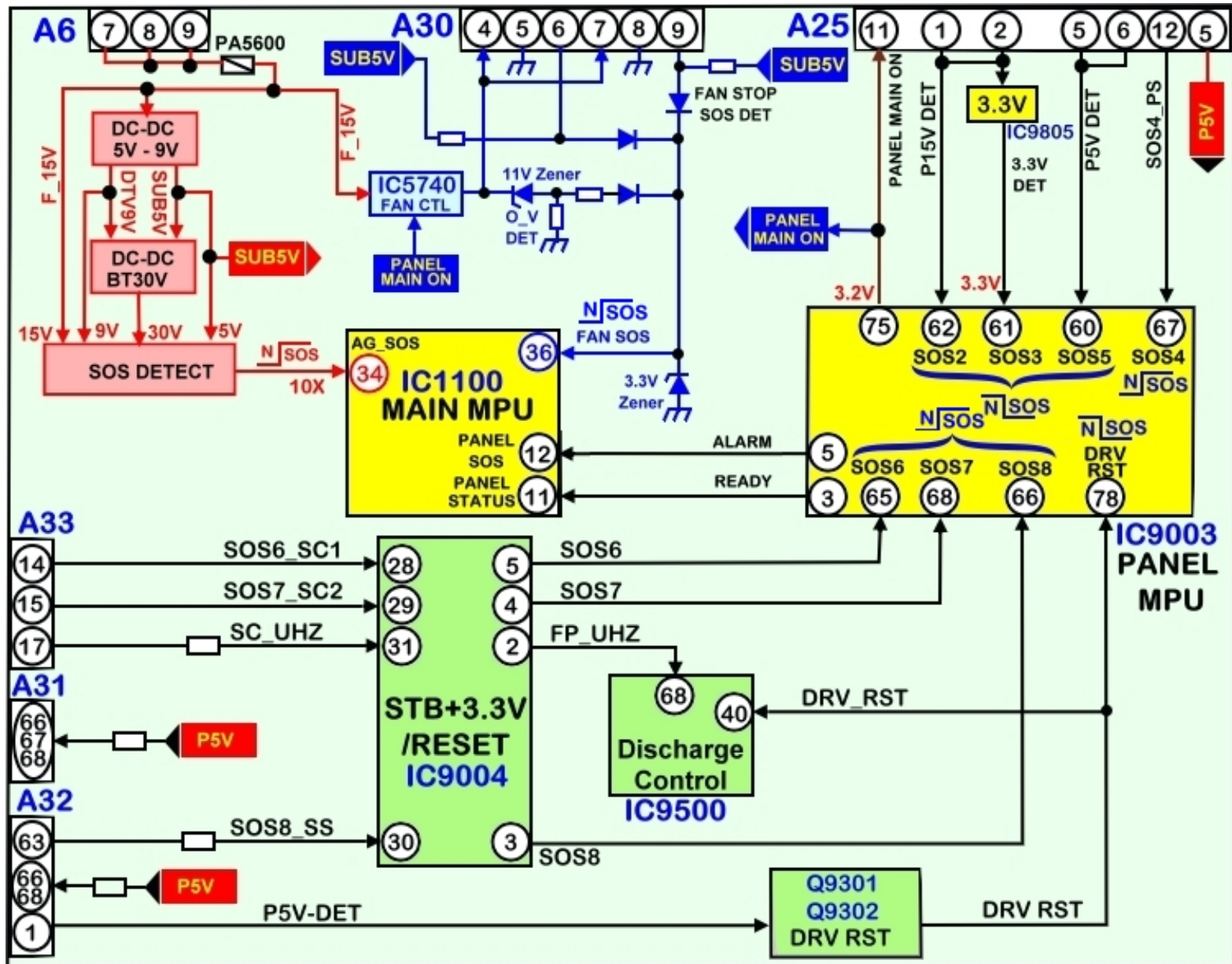
Number of Blinks	Blinking Timing	Monitored Items	Possible Boards
1		Panel Status	-
		STB 5V SENSE Time out	A-P
2		15V SOS	A-SC-SS
3		3.3V SOS	A-Board
4		Power SOS	A-P
5		5V SOS	A-P-C SC-SS Panel
6		Driver SOS1 SC/SS Energy Recovery Circuit	SC-SU SD-SS-A
7		Driver SOS2 SC Floating Voltage Area	SC-SU SD-A-P Panel
8		Driver SOS3 SS FPC DET.	SS-A SS2-P Panel
9		Communication Error Between Main CPU and Panel MPU	A
10		Sub 5V SOS Main 3.3V SOS DTV 9V SOS Tuner Power SOS	SS-A-P SC-K SU-SD
11		Fan SOS	A-Fans
13		Communication Error With IC8001	A

When an abnormality occurs in the TV, the “SOS Detect” circuit is triggered and the TV shuts down. The power LED on the front panel will flash a pattern indicating the circuit that has failed.

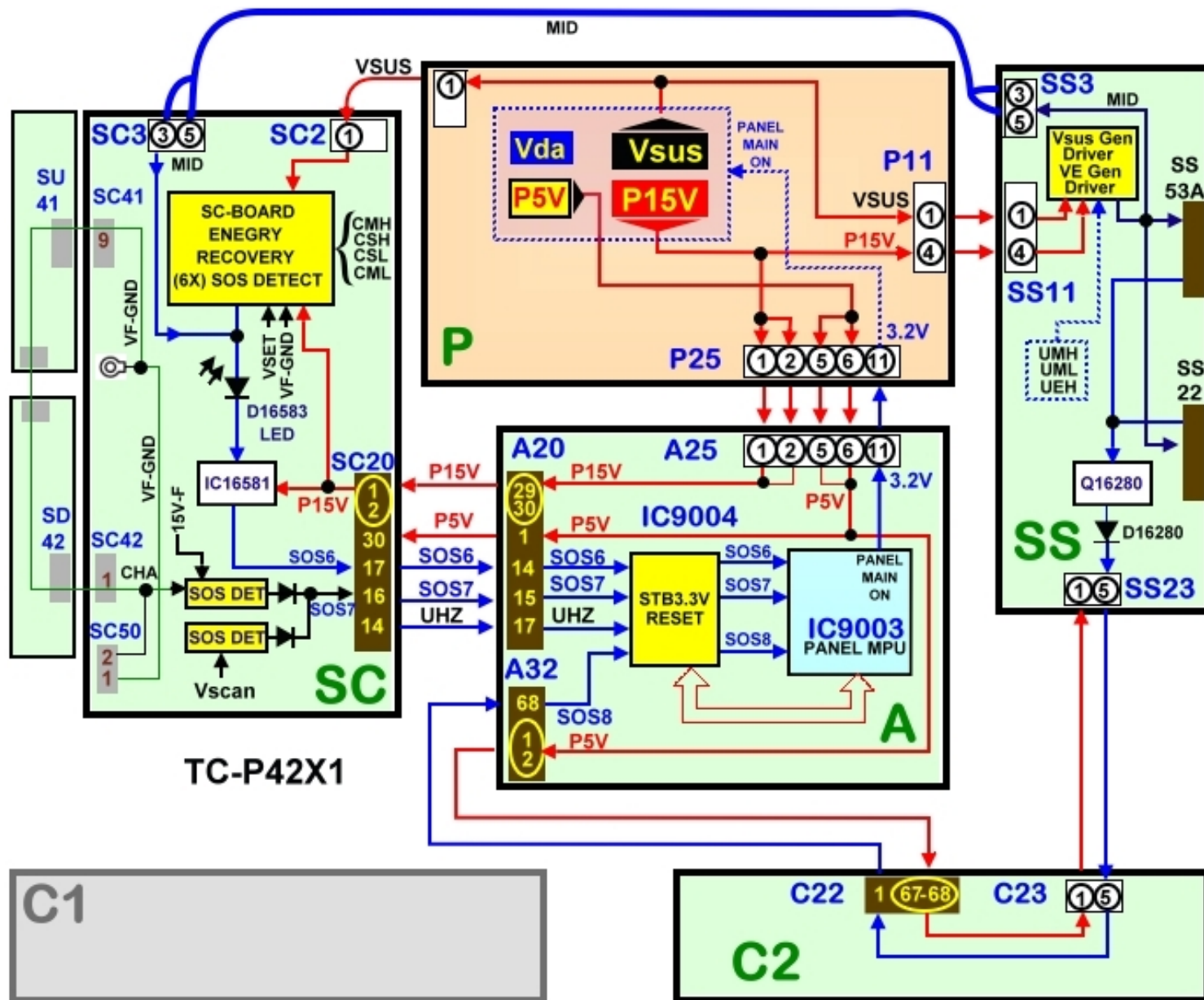
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Shutdown Detect Block Diagram

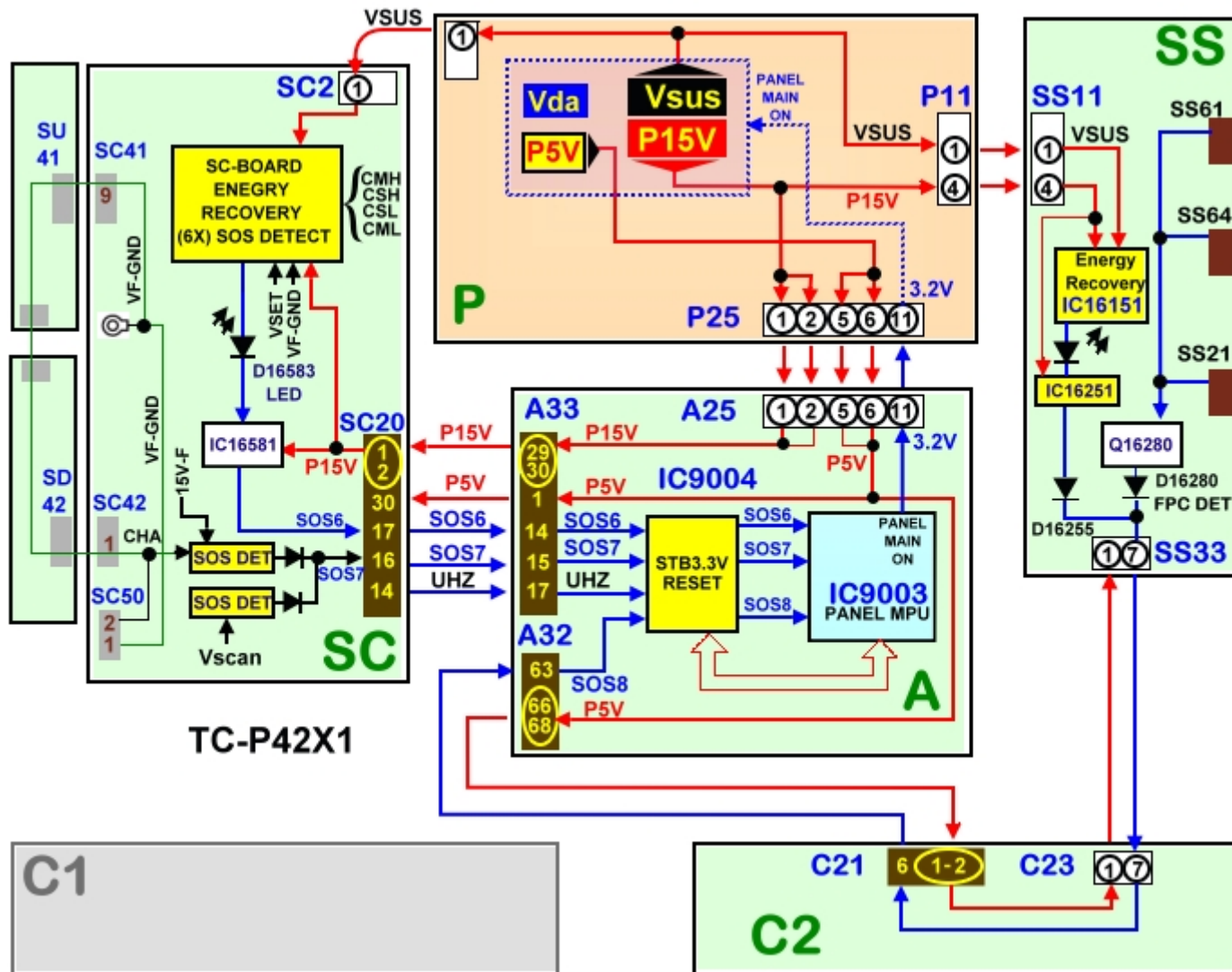


HD Panel Drive SOS Detect Block Diagram (TC-P42X1)



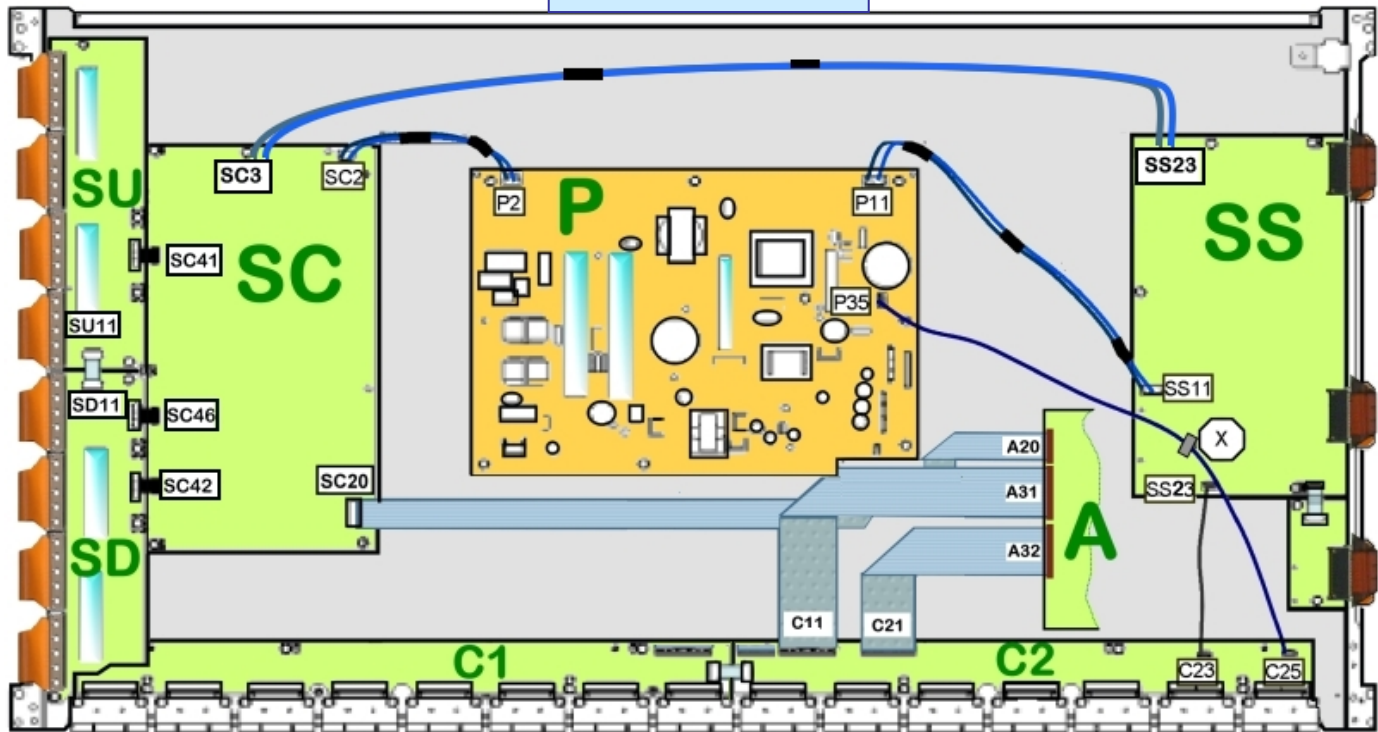
TC-P42X1

Full-HD Panel Drive SOS Detect Block Diagram (TC-P42S1)



Power LED's Response to Connectors Removal (42" HD Models)

HD Models



Do not remove any connectors from any of the PC boards unless instructed to do so.

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

Model: TC-P42X1			
Connector	Connector	Connector	Result
A20 Unplugged			OK
	A31 Unplugged		SOS 6 Blinks
		A32 Unplugged	SOS 6 Blinks
A20 Unplugged	A31 Unplugged		OK
A20 Unplugged		A32 Unplugged	OK
	A31 Unplugged	A32 Unplugged	SOS 6 Blinks
A20 Unplugged	A31 Unplugged	A32 Unplugged	TV Stays On With Black Screen

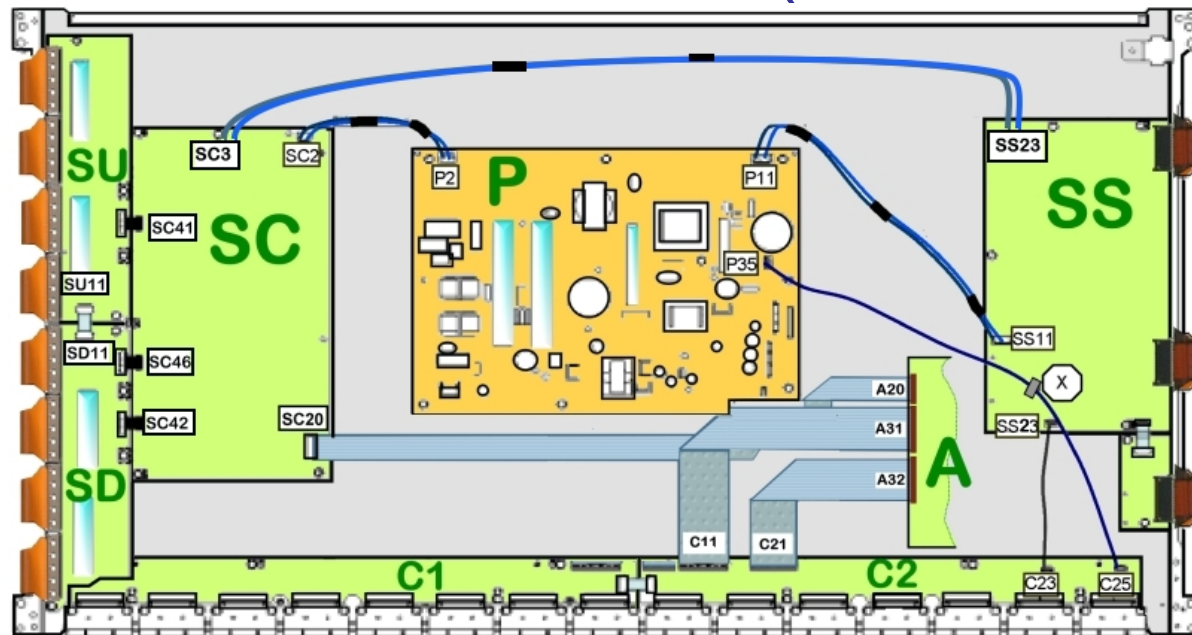
Power LED's Response to Connectors Removal (42" HD Models)

42"HD Models

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Do not remove any connectors from any of the PC boards unless instructed to do so.



Model: TC-P42X1 (SC Board Isolation)

Connector	Connector	Connector	Connector On SS board	Result
SC2 Unplugged				SOS 7 Blinks
	SC3 Unplugged			SOS 6 Blinks
		SC20 Unplugged		OK
SC2 Unplugged	SC3 Unplugged			SOS 7 Blinks
SC2 Unplugged		SC20 Unplugged		SOS 8 Blinks
	SC3 Unplugged	SC20 Unplugged		SOS 8 Blinks

Model: TC-P42X1 (SS Board Isolation)

Connector	Connector	Connector	Result
SS11 Unplugged			SOS 6 Blinks
	SS3 Unplugged		SOS 6 Blinks
		SS23 Unplugged	OK
SS11 Unplugged	SS3 Unplugged		SOS 6 Blinks
SS11 Unplugged		SS23 Unplugged	SOS 6 Blinks
	SS3 Unplugged	SS23 Unplugged	SOS 6 Blinks
SS11 Unplugged	SS3 Unplugged	SS23 Unplugged	SOS 6 Blinks

SC2 Unplugged	SC3 Unplugged	SC20 Unplugged	SS11 Unplugged	OK
SC2 Unplugged		SC20 Unplugged	SS11 Unplugged	OK
		SC20 Unplugged	SS11 Unplugged	OK

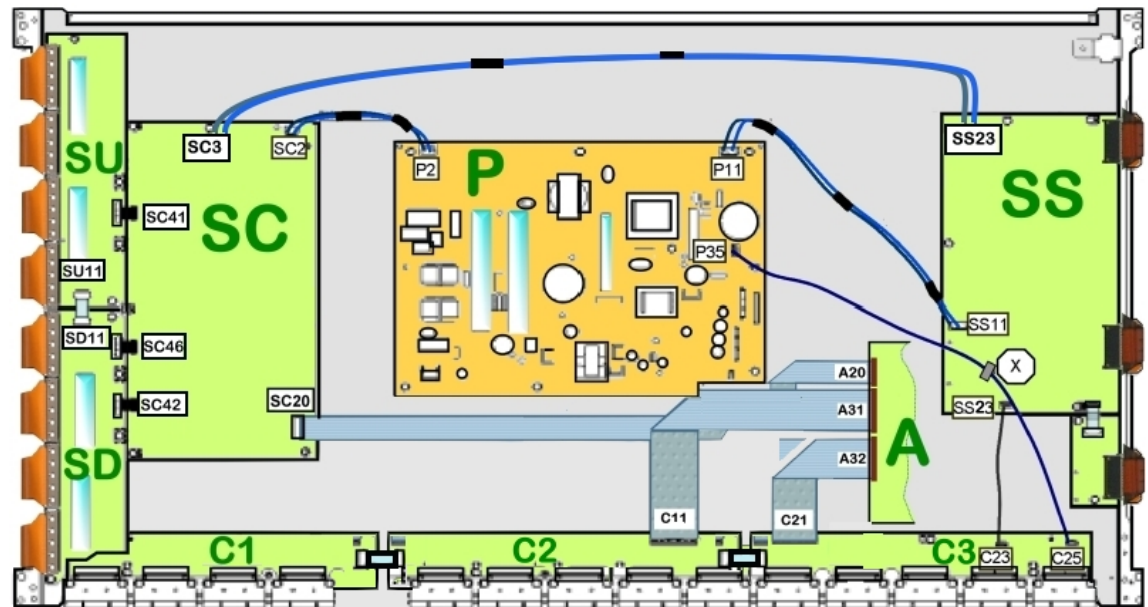
Power LED's Response to Connectors Removal (50" HD Models)

50"HD Models

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Do not remove any connectors from any of the PC boards unless instructed to do so.



Model: **TC-P50X1** (SC Board Isolation)

Connector On C1 board	Connector	Connector	Connector On SS board	Result
	SC3 Unplugged			SOS 6 Blinks
		SC20 Unplugged		SOS 6 Blinks
	SC3 Unplugged	SC20 Unplugged	SS11 Unplugged	SOS 8 Blinks
C10 Unplugged		SC20 Unplugged	SS11 Unplugged	OK

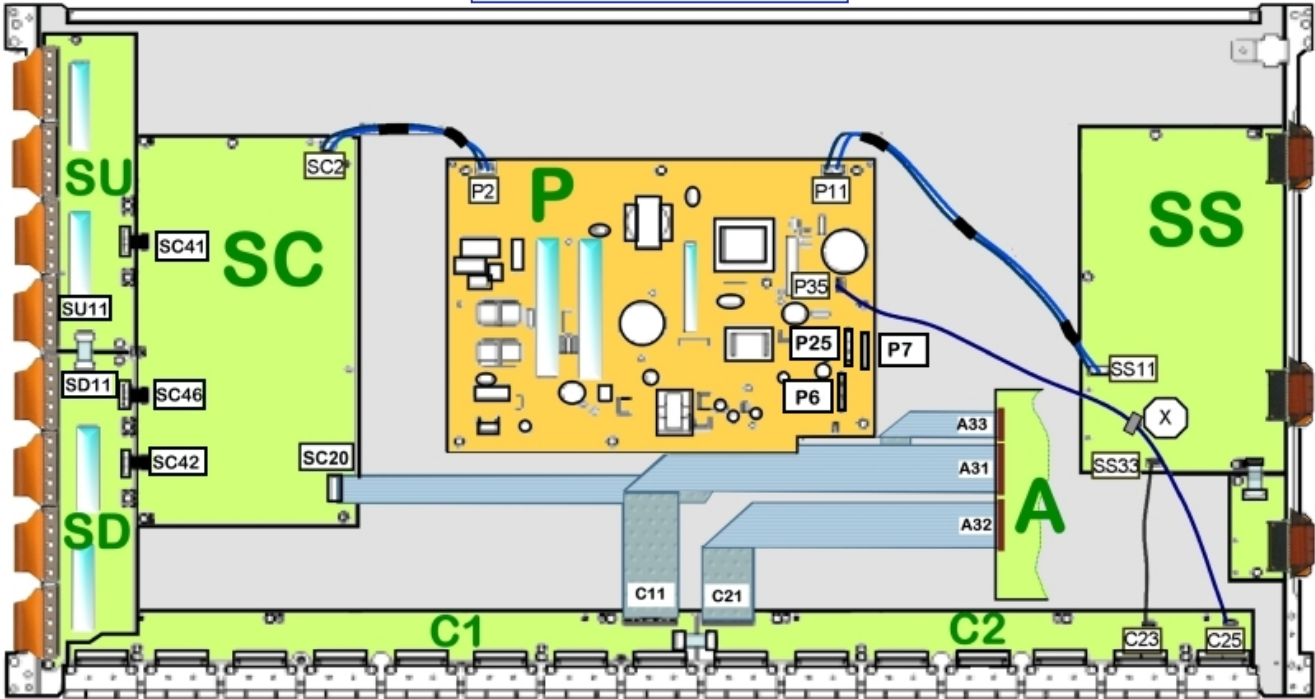
Model: **TC-P42X1** (SS Board Isolation)

Connector	Connector	Connector	Result
SS11 Unplugged			SOS 6 Blinks
	SS3 Unplugged		SOS 6 Blinks
		SS23 Unplugged	OK
SS11 Unplugged	SS3 Unplugged		SOS 6 Blinks
SS11 Unplugged		SS23 Unplugged	SOS 6 Blinks
	SS3 Unplugged	SS23 Unplugged	SOS 6 Blinks
SS11 Unplugged	SS3 Unplugged	SS23 Unplugged	SOS 6 Blinks

SC3 Unplugged	SC20 Unplugged	SS11 Unplugged	SOS 6 Blinks
	SC20 Unplugged	SS11 Unplugged	SOS 6 Blinks
	SC20 Unplugged	SS11 Unplugged	SOS 6 Blinks

Power LED's Response to Connectors Removal (Full HD Models)

Full HD Models



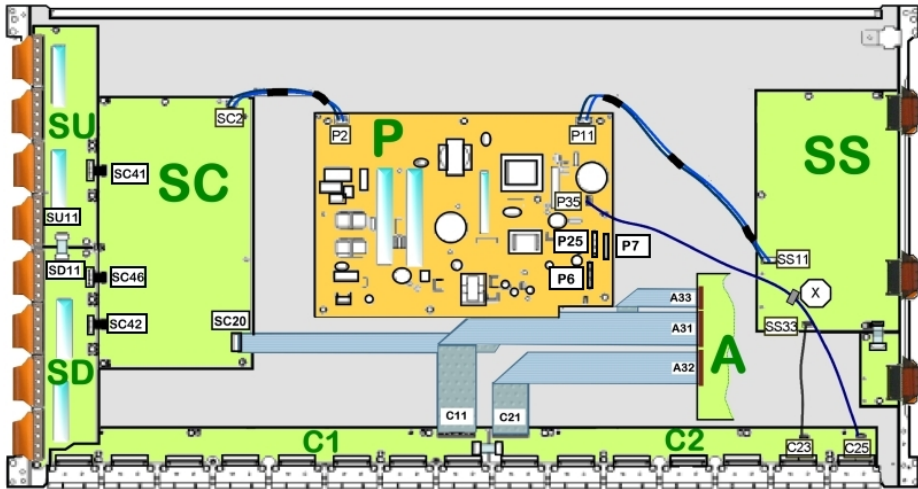
Do not remove any connectors from any of the PC boards unless instructed to do so.

CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Model: TC-P42S1			
Connector	Connector	Connector	Results
A33 Unplugged			SOS 6 Blinks
	A31 Unplugged		Left Half of Screen is OK (Right Side is Black)
		A32 Unplugged	SOS 6 Blinks
A33 Unplugged	A31 Unplugged		SOS 6 Blinks *
A33 Unplugged		A32 Unplugged	OK
	A31 Unplugged	A32 Unplugged	SOS 6 Blinks
A33 Unplugged	A31 Unplugged	A32 Unplugged	TV Stays On With Black Screen

Power LED's Response to Connectors Removal (Full HD Models)

Full HD Models



CAUTION: Some steps require removal of connectors and sometimes PC boards removal. Do not let the TV run for more than 30 seconds while connectors or boards are disconnected.

Do not remove any connectors from any of the PC boards unless instructed to do so.

Model: TC-P42S1 (SS Board Isolation)			
Connector	Connector	Connector	Results
SC20 Unplugged			6 Blinks *
	SC2 Unplugged		7 Blinks *
SC20 Unplugged	SC2 Unplugged		6 Blinks *

Model: TC-P42S1 (SS Board Isolation)		
Connector	Connector	Result
SS11 Unplugged		OK
	SS33 Unplugged	OK
SS11 Unplugged	SS33 Unplugged	OK

Model: TC-P42S1 Connectors Combination between SS and SC Boards)				
SC Board		SS Board		Result
Connector	Connector	Connector	Connector	
SS11 Unplugged		SC2 Unplugged		7 Blinks
SS11 Unplugged			SC20 Unplugged	6 Blinks
SS11 Unplugged		SC2 Unplugged	SC20 Unplugged	6 Blinks
SS11 Unplugged	SS33 Unplugged	SC2 Unplugged		7 Blinks
SS11 Unplugged	SS33 Unplugged		SC20 Unplugged	6 Blinks
SS11 Unplugged	SS33 Unplugged	SC2 Unplugged	SC20 Unplugged	6 Blinks
	SS33 Unplugged	SC2 Unplugged		7 Blinks
	SS33 Unplugged		SC20 Unplugged	6 Blinks
	SS33 Unplugged	SC2 Unplugged	SC20 Unplugged	6 Blinks

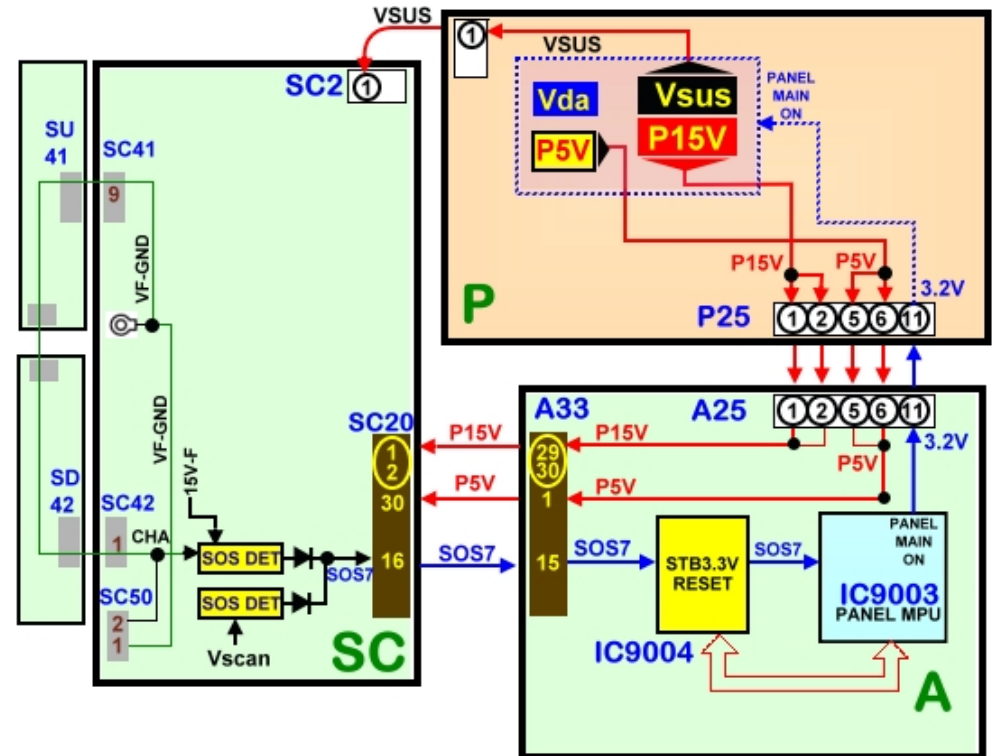
SU and SD Boards Isolation Procedure

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Beginning last year (2008), the plasma TV are designed to shutdown if either the SU or SD board is disconnected.

Disconnecting either board causes the unit to shutdown and the power LED to blink 7 times.

Unplugging any of the connectors SC41/SU41, SU11/SD11, and SC42/SD42, opens the interlocked connection between VF_GND and CHA on the SC board. This floats point "CHA" triggering the SOS7 detect circuit. This outputs a high to the A board through connector SC20 triggering shutdown.



A new SC test fixture (Jig) can be used when the SU and SD boards are isolated. The jig is a small connector with a jumper between pin 1 and pin 2. The part number is [TZSC09187](#).

It plugs into connector SC50 on the SC board.



Procedure to Isolate both SU & SD at the Same Time

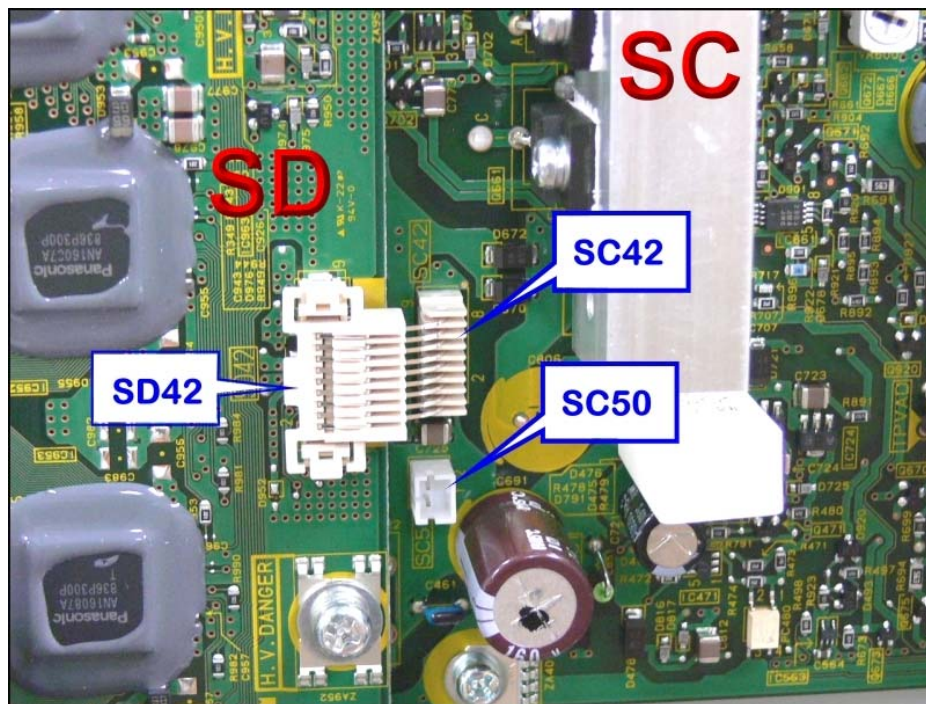
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

To isolate the SU and SD boards at the same time is not necessary to remove any of the boards:

- Remove the 4 VF_GND screws (2 on the SU board and 2 on the SD board).
- Unplug connectors SC41, SC46, and SC42 on the SC board.
- Place the SC jig cable ([TZSC09187](#)) between pins 1 and 2 of connector SC50 on the SC board.
- the SC board.

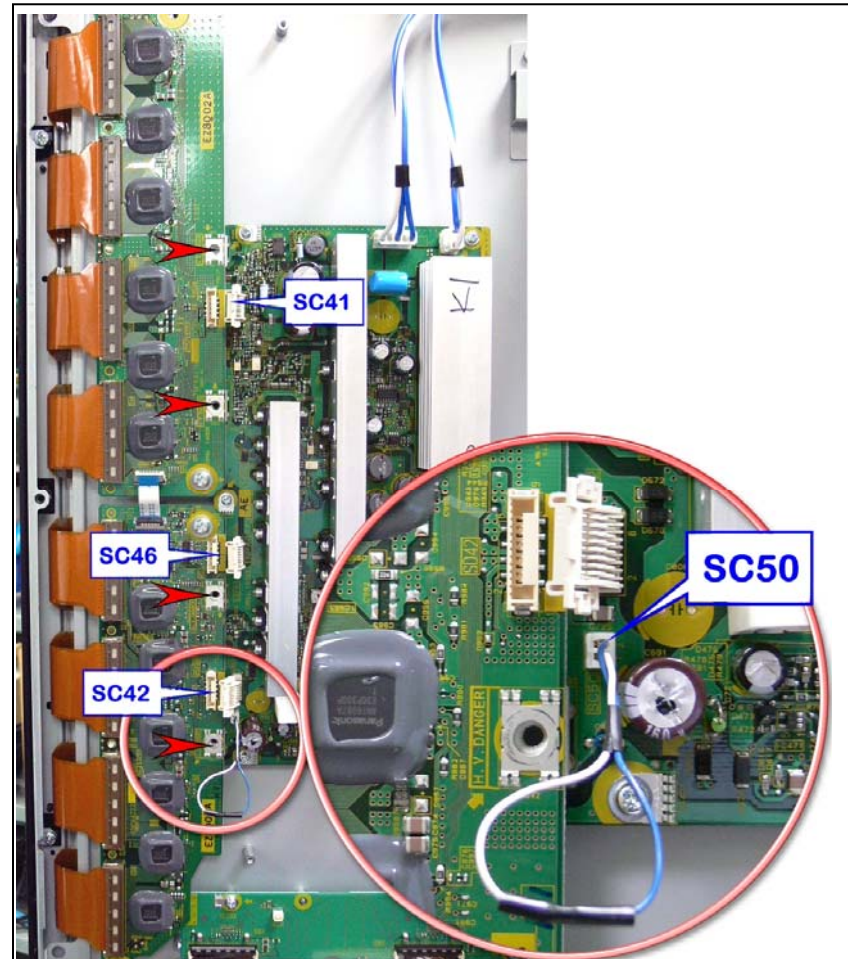
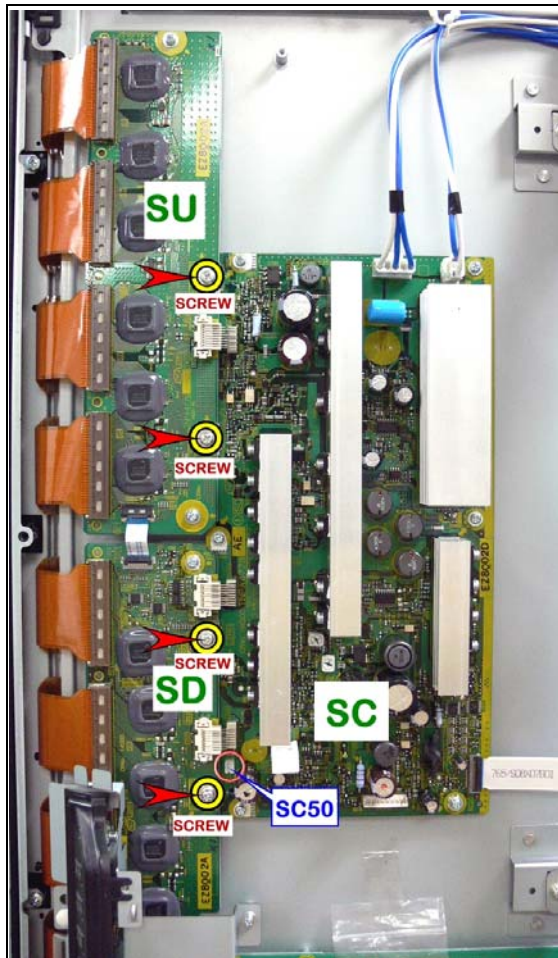
Note: If the SC jig is not available, install a jumper between pins 1 and 2 of connector SC50 on the SC board. (Remove the jig or the jumper after completing isolation procedure). When this is done, the display is completely black (No picture)

Note: This procedure could be useful when troubleshooting 7 blinks problems.



Procedure to Isolate both SU & SD at the Same Time

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



SU Board Isolation Procedure

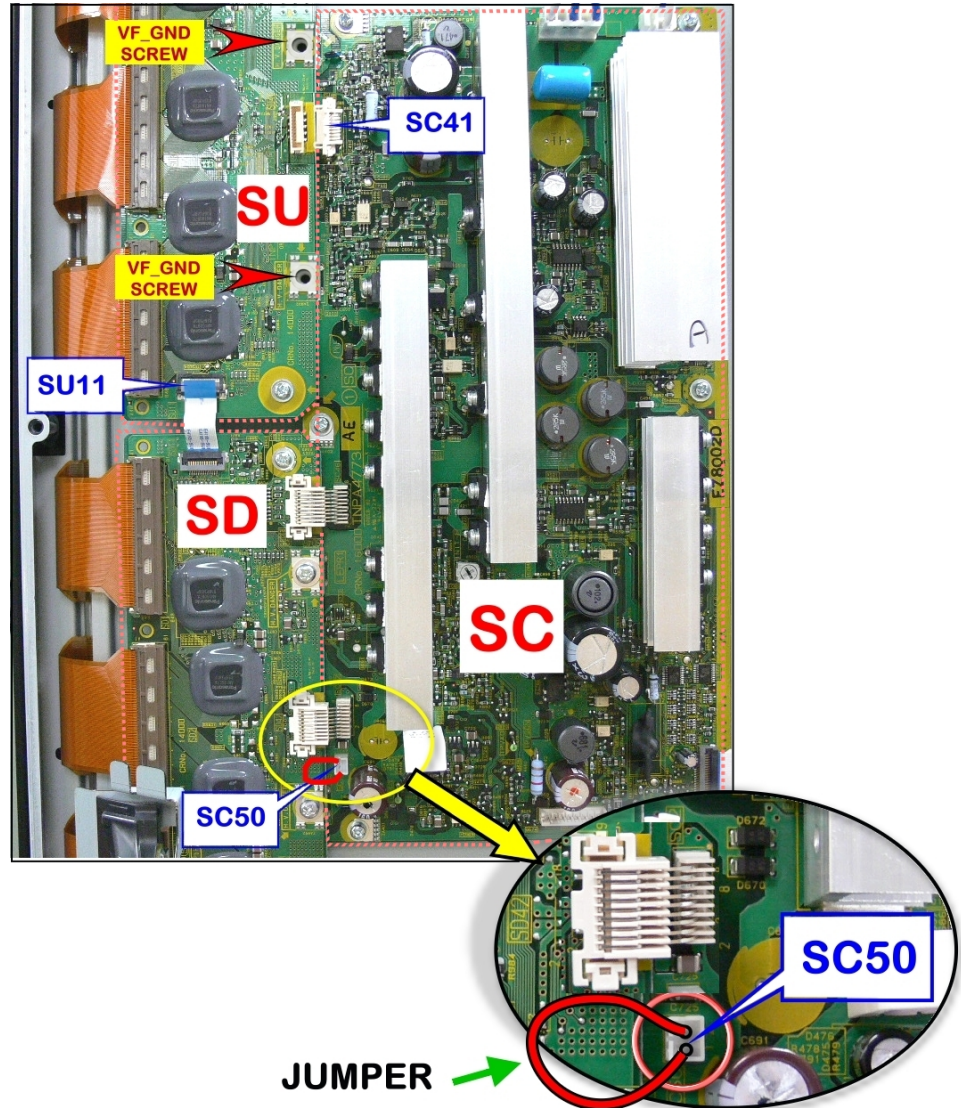
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

To isolate the SU board:

1. Remove the 2 VF_GND screws on the SU board only.
2. Unplug connector SC41 on the SC board and SU11 on SU board.
3. Place SC jig cable **ZSC09187**) between pins 1 and 2 of connector SC50 on the SC board.

Note: If the SC jig is not available, install a jumper between pins 1 and 2 of connector SC50 on the SC board. (Remove the jig or jumper after completing isolation procedure)

Note: This procedure could be useful when troubleshooting 7 blinks problems.



SD Board Isolation Procedure

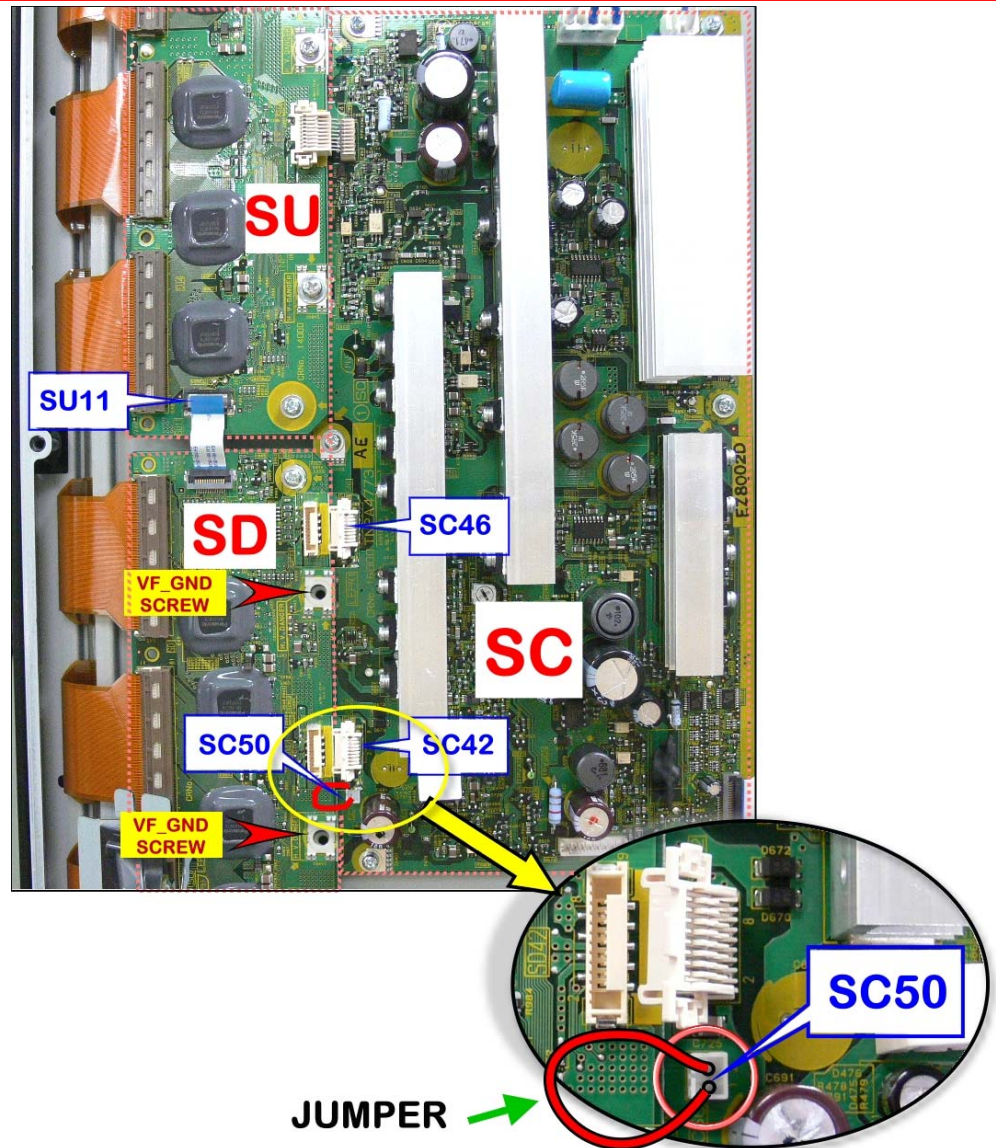
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

To isolate the SD board:

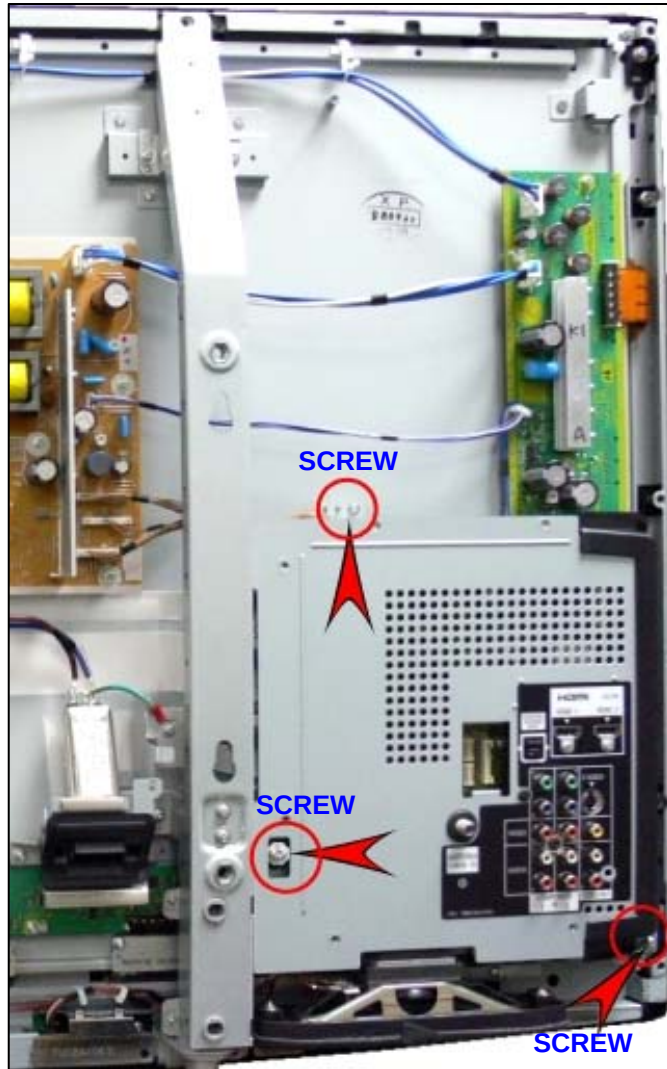
1. Remove the 2 VF_GND screws on the SD board only.
2. Unplug connector SC42/SU42, SC46/SD46, and SU11/SD11 from the SD board.
3. Place SC jig cable (**TZSC09187**) between pins 1 and 2 of connector SC50 on the SC board.

Note: If the SC jig is not available, install a jumper between pins 1 and 2 of connector SC50 on the SC board. (Remove the jig or jumper after completing isolation procedure)

Note: This procedure could be useful when troubleshooting 7 blinks problems.



How to Easily Gain Access to the SS board



- 1 Remove the 3 screws that hold the A board assembly in place



- 2 Let the A board assembly rest on the speaker's magnet to gain access to the SS board

Front Cabinet Removal

Remove the rear cover.

Remove the 4 screws holding the front panel in place.

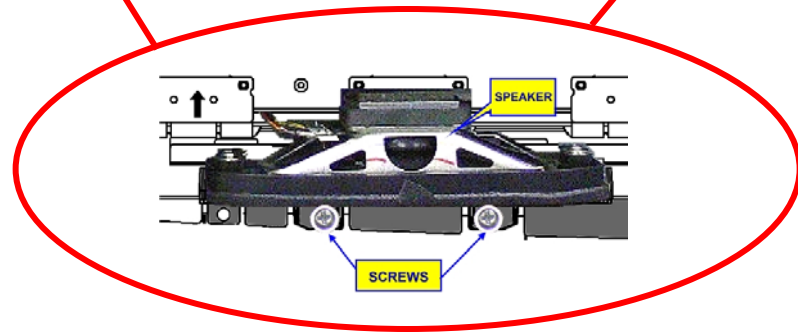
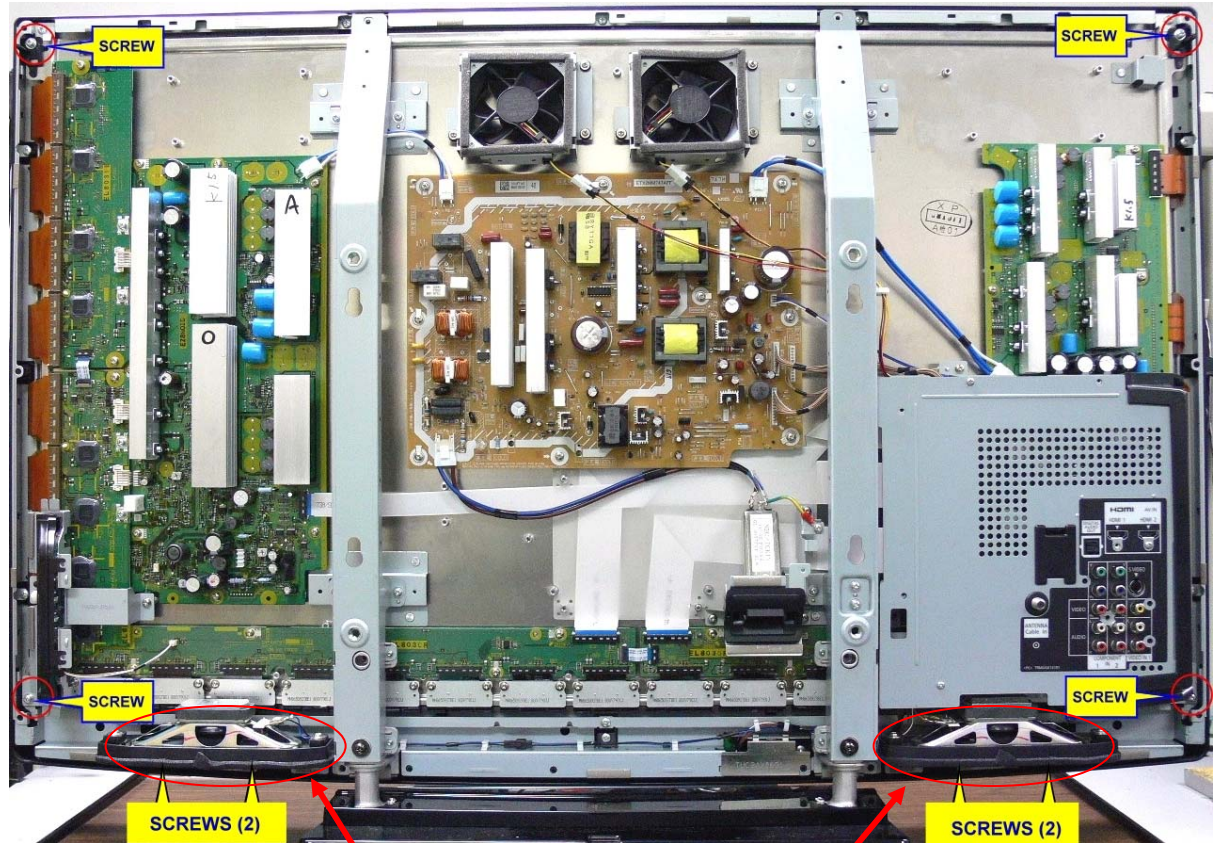
Remove the cables from the speakers.

Remove the screws from the speakers (2 each).

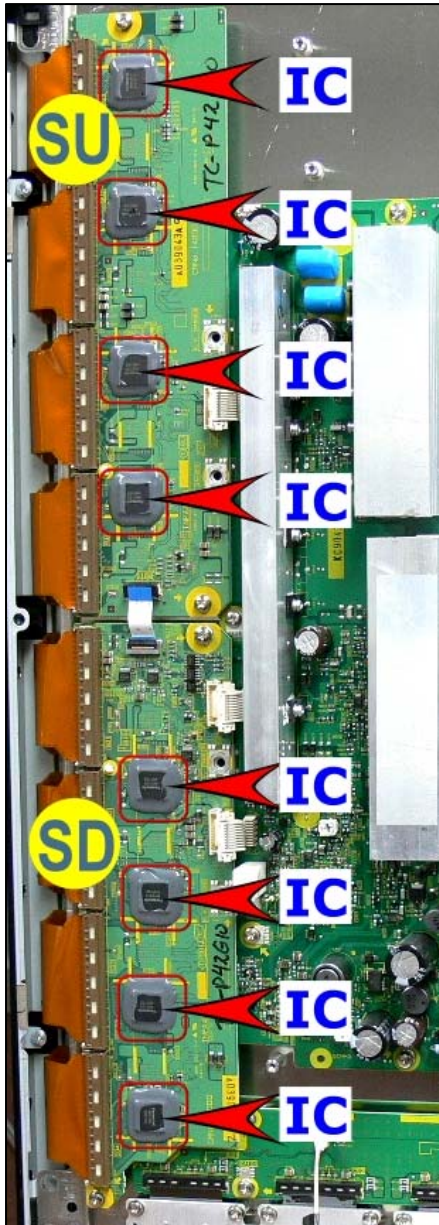
Remove the speakers.

Remove the front cabinet.

Note: To remove the front cabinet, pull the bottom slightly forward and then lift it up.

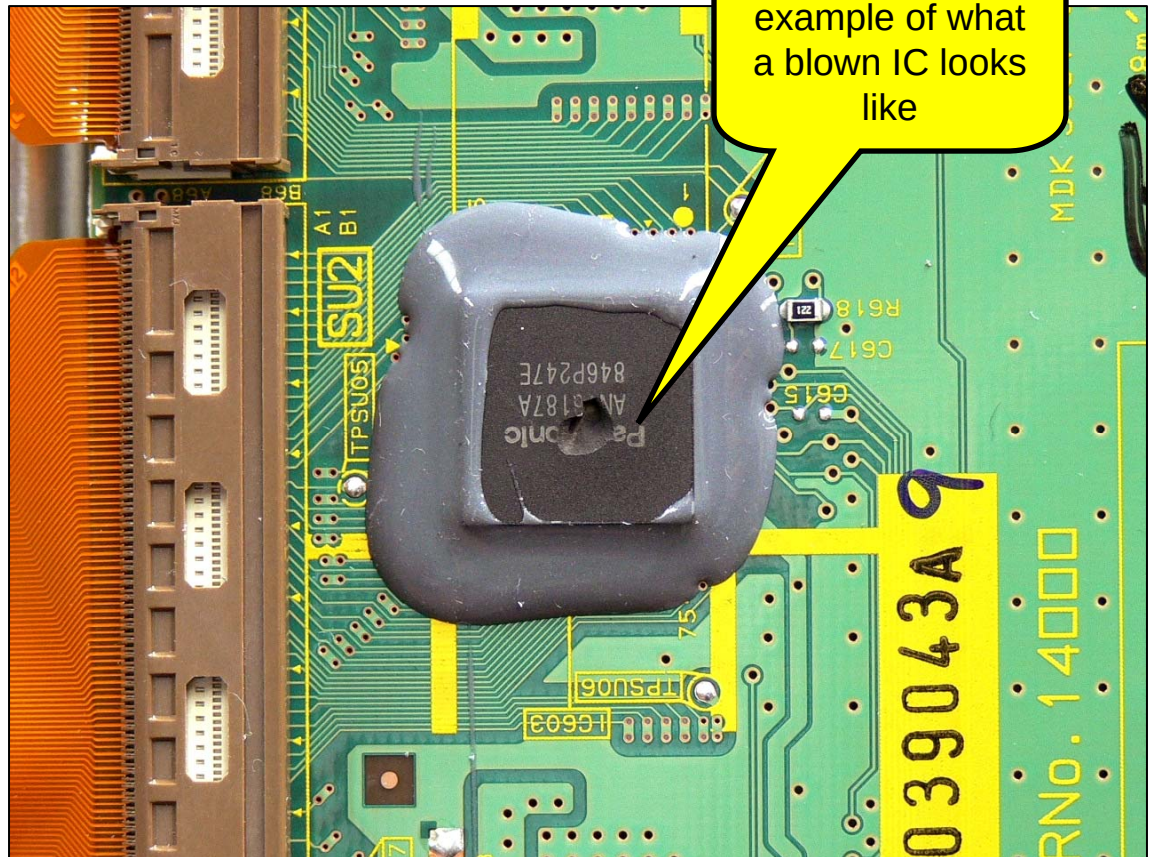


SU and SD Boards Visual Inspection



Check the ICs on the SU and SD boards for blown hole on the surface.

Note: In some models it is not possible to check if these ICs are blown because they use surface-mount heat sinks that are glued to the surface of the ICs.



SU,SD, and SC Boards Resistance Test Procedure

SU,SD, and SC Boards Resistance Test Procedure

Note: The result of the resistance test determine if the boards are bad, but it does not determine if they are 100% good. For this reason, after performing a resistance test, we need to further check the boards that check OK using another procedure.

SU Board Resistance Test (All Models)

Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

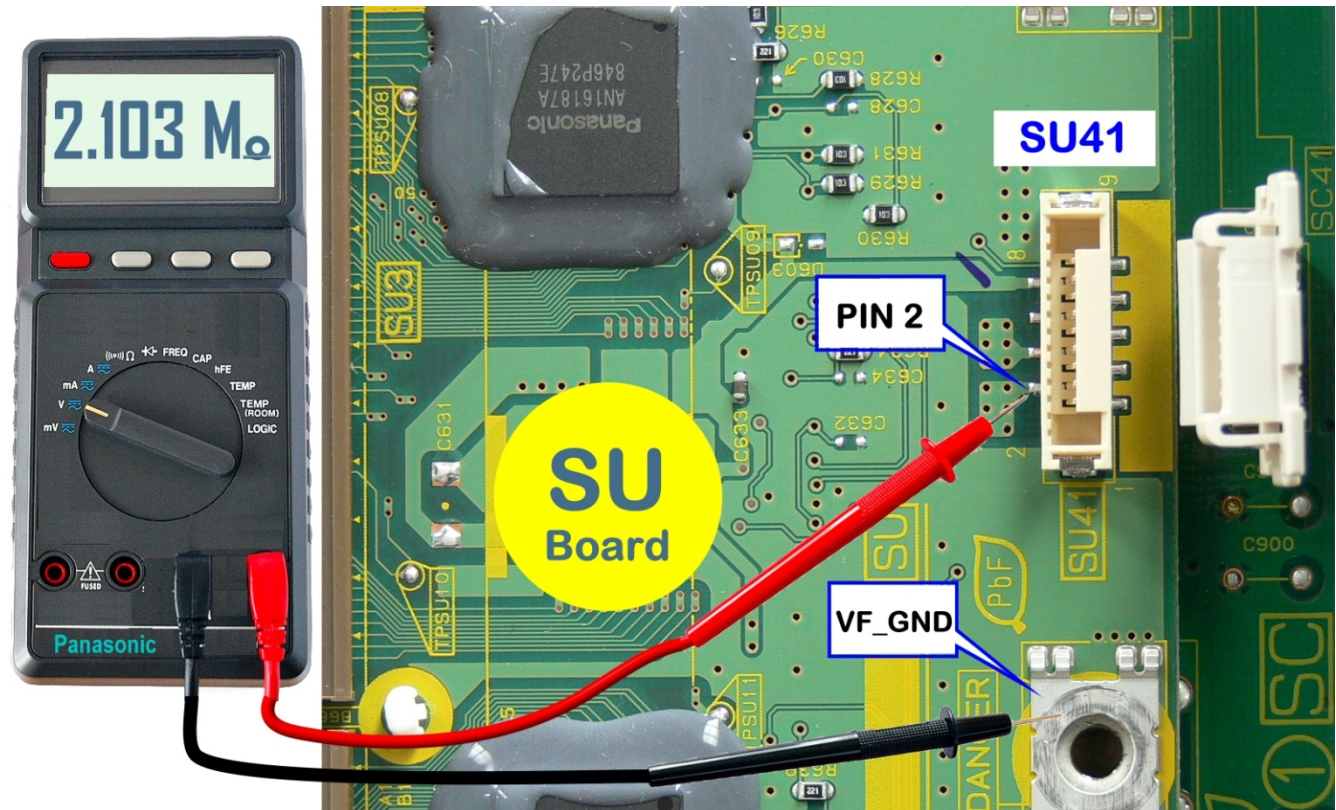
Unplug connector SU41 and SU11. Remove the 2 floating ground screws from the SU board.

Procedure:

Using a digital meter measure the resistance between VF-ground (Floating ground) and pin 2 of connector SU41 on the SU board.

The normal resistance should be approximately 2.1Mega-ohms.

Note: A low resistance reading indicates a defective SU board.



SD Board Resistance Test (All Models, Except TC-50PX14, TC-P50C1, TC-P50X1)

Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

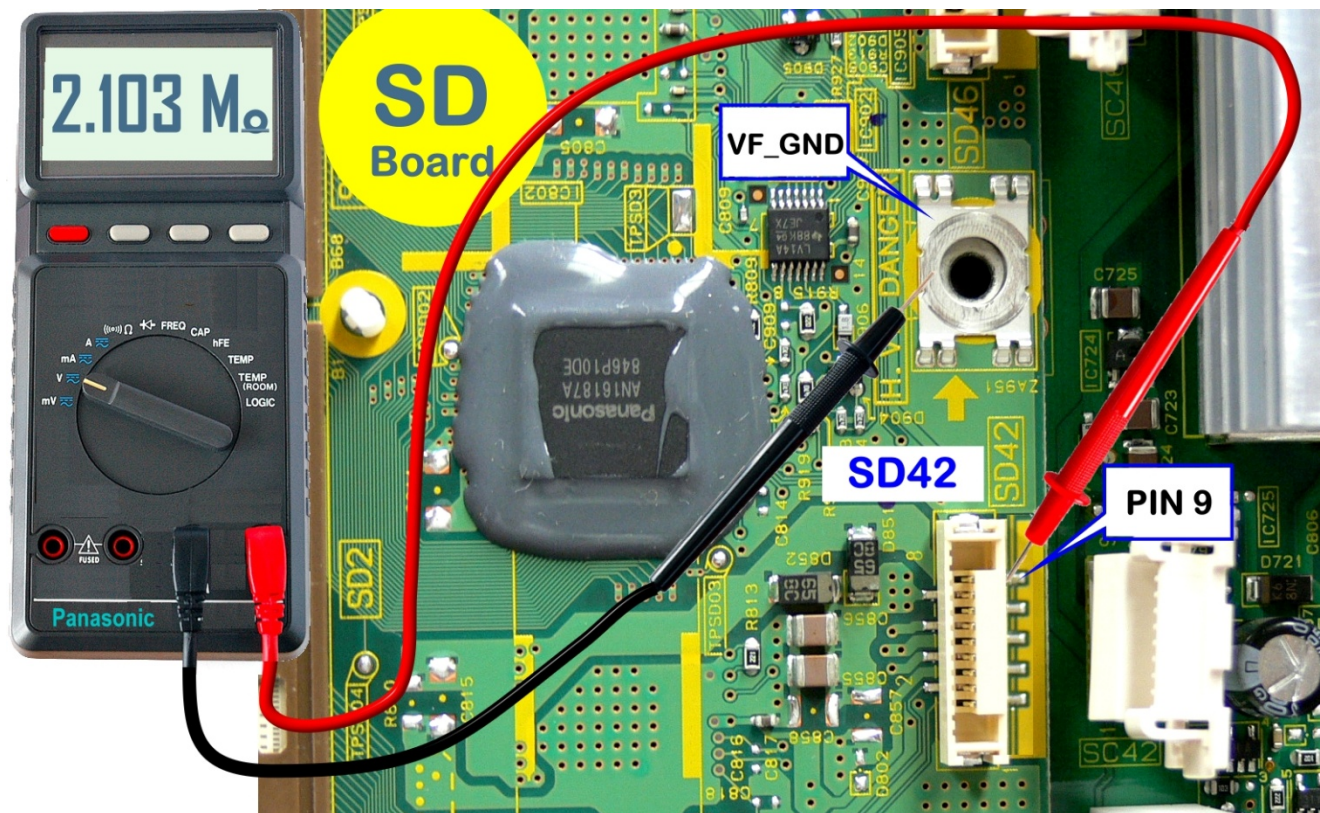
Unplug connectors SD42, SD46 and SD11. Remove the 2 floating ground screws from the SD board.

Procedure:

Using a digital meter, measure the resistance between VF-ground (Floating ground) and pin 9 of connector SD42 on the SD board.

The normal resistance should be approximately 2.1Mega-ohms.

Note: A low resistance reading indicates a defective SD board.



SD Board Resistance Test (Models: TC-50PX14, TC-P50C1, TC-P50X1)

Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

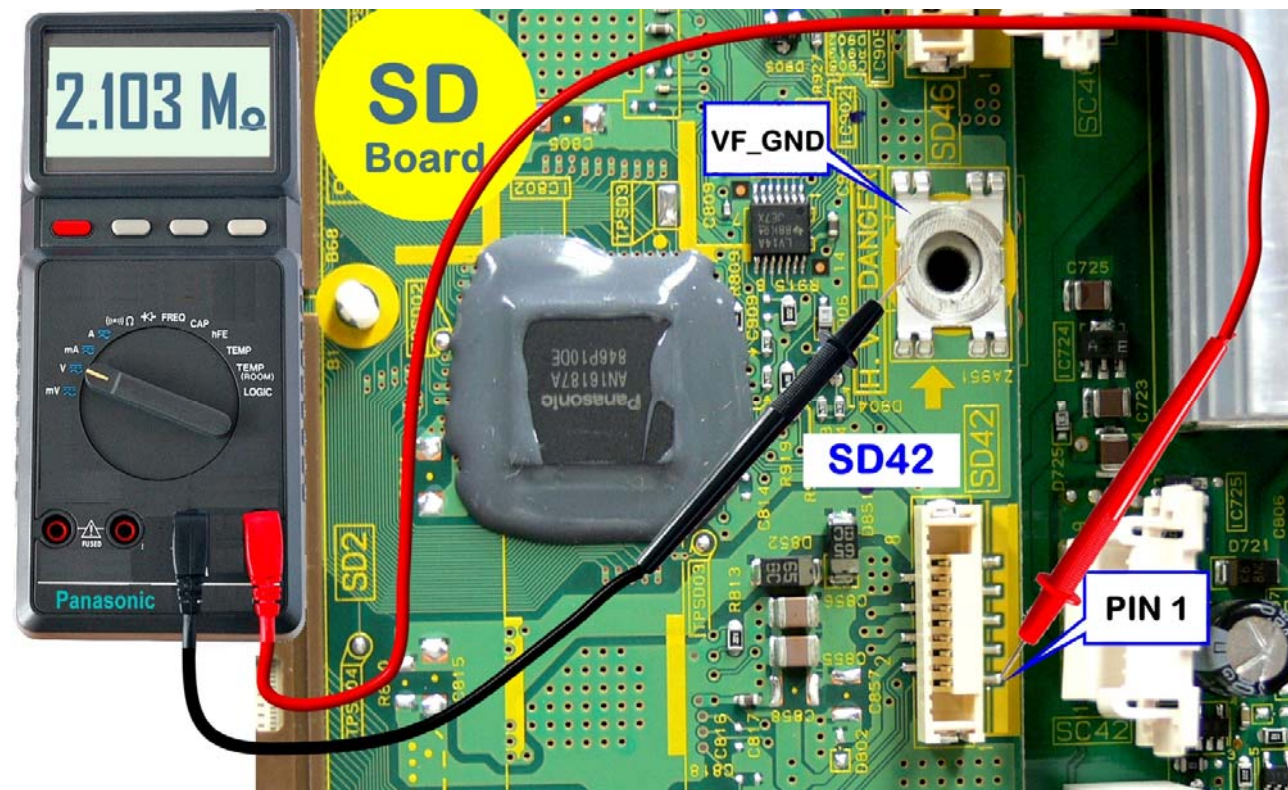
Unplug connectors SD42, SD46 and SD11. Remove the 2 floating ground screws from the SD board.

Procedure:

Using a digital meter, measure the resistance between VF-ground (Floating ground) and pin 1 of connector SD42 on the SD board.

The normal resistance should be approximately 2.1Mega-ohms.

Note: A low resistance reading indicates a defective SD board.



SC Board Resistance Test (All Models, Except TC-50PX14, TC-P50C1, TC-P50X1)

Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Unplug connectors SD42, SD46, SU41 and SD11. Out of all 4 floating ground screws on the SU and SD boards, remove 3 and leave only one in.

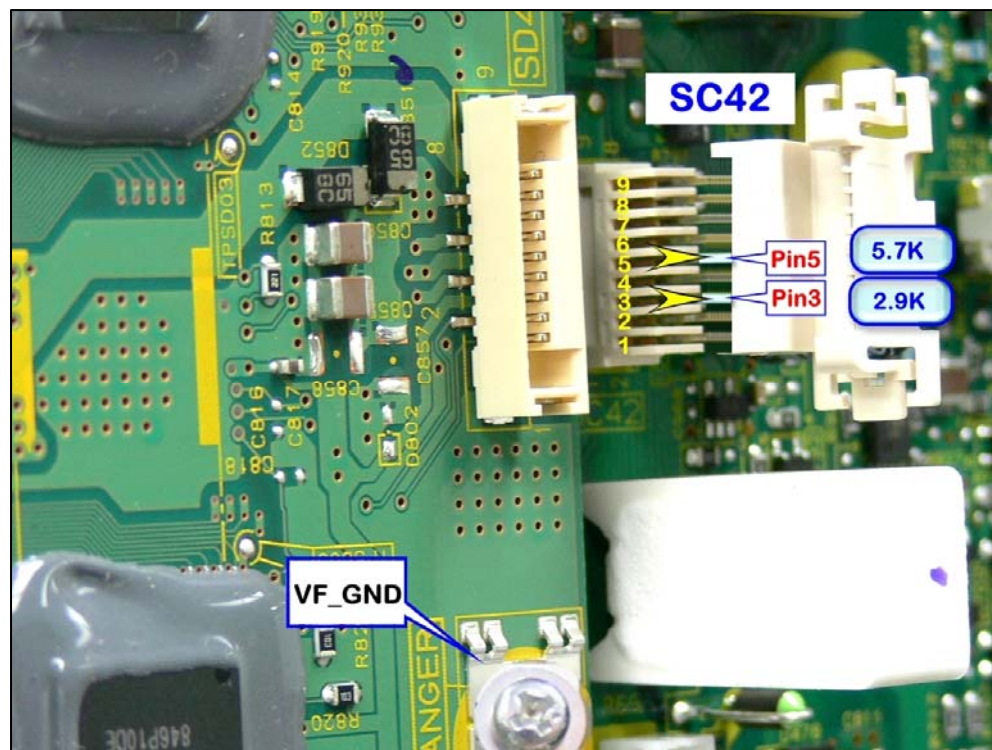
Procedure:

Using a digital meter measure the resistance between the VF-ground screw (Floating ground) and pin 3 of connector SC42.

Also measure the resistance between the VF-ground screw (Floating ground) and pin 5 of connector SC42 on the SC board.

The normal resistance for pin 3 is approximately **2.9Kilo-ohms** and approx. **5.7Kilo-ohms** for pin 5.

Note: A low resistance reading indicates a defective SC board.



SC Board Resistance Test (Models: TC-50PX14, TC-P50C1, TC-P50X1)

Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Unplug connectors SD42, SD46, SU41 and SD11. Out of all 4 floating ground screws on the SU and SD boards, remove 3 and leave only one in.

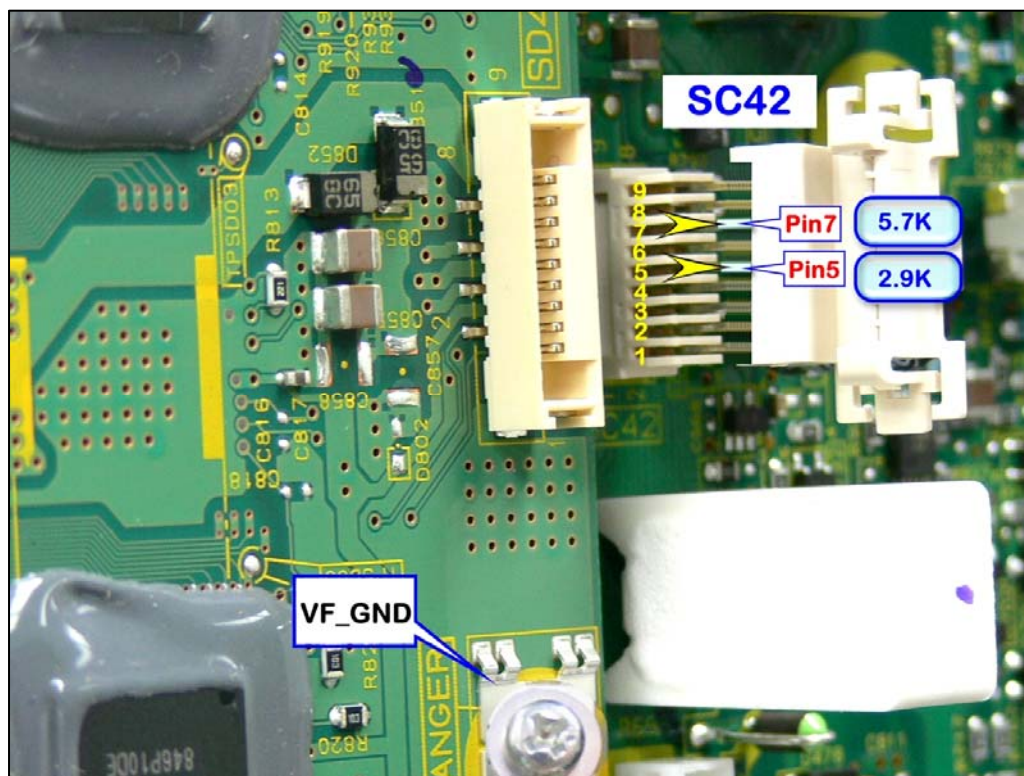
Procedure:

Using a digital meter measure the resistance between the VF-ground screw (Floating ground) and pin 5 of connector SC42.

Also measure the resistance between the VF-ground screw (Floating ground) and pin 7 of connector SC42 on the SC board.

The normal resistance for pin 5 is approximately **2.9Kilo-ohms** and approx. **5.7Kilo-ohms** for pin 7.

Note: A low resistance reading indicates a defective SC board.

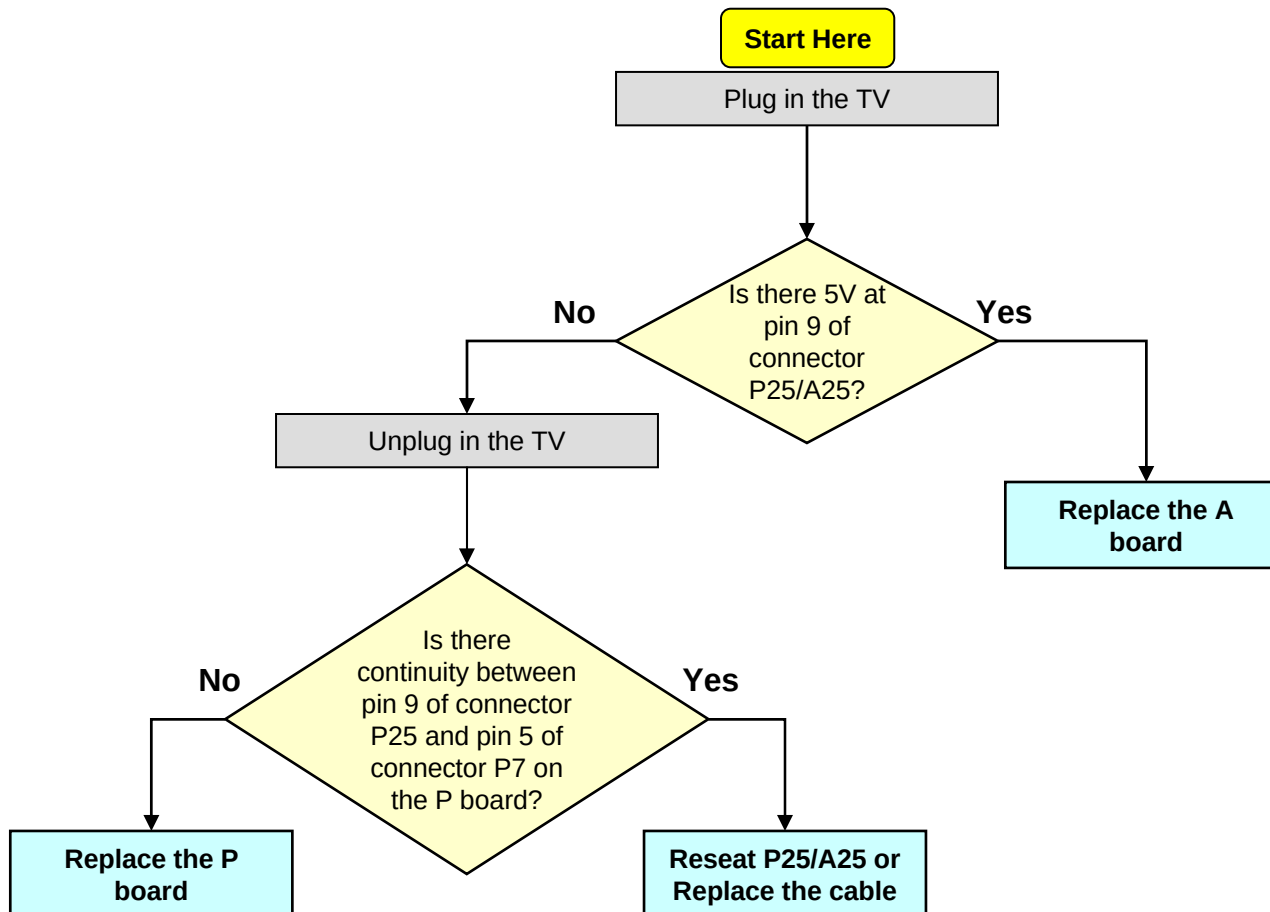


1 Blink Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
Communication Error	A, P, Loose connections
Make sure that connectors P25 and D25 are properly seated	

Warning: Disconnect AC Power prior to making any disconnection or connection.



2 Blinks Error Code (All Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

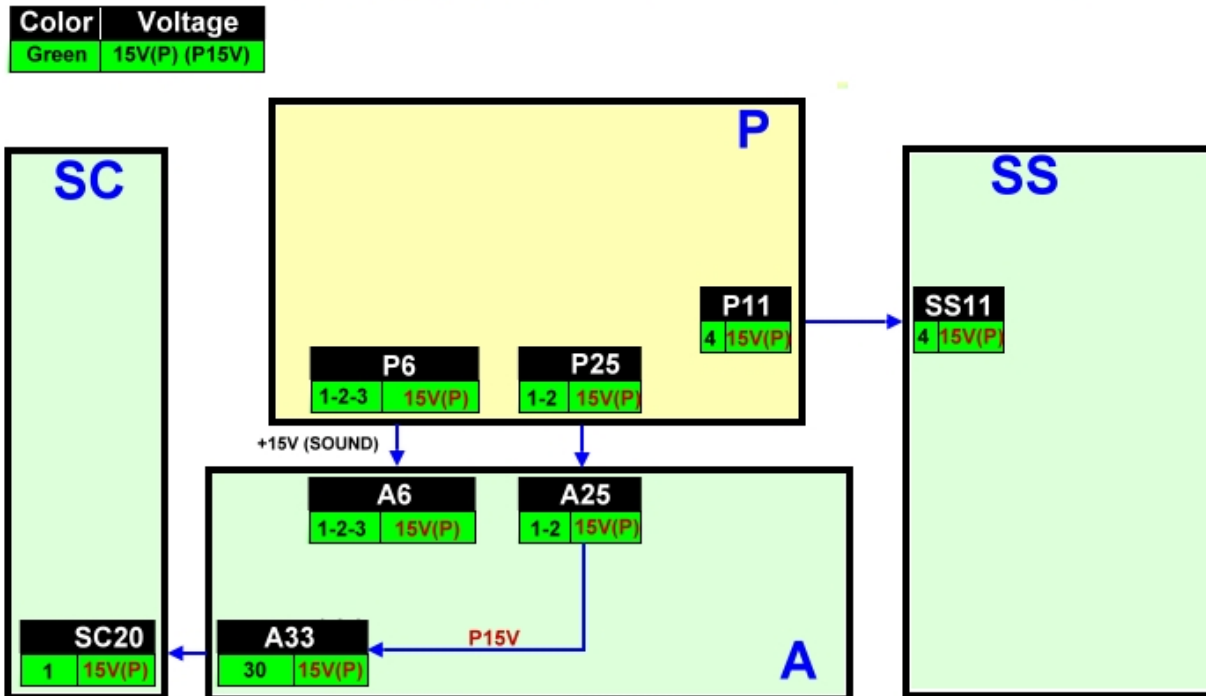
Trouble Mode	Defective Board
P15V	A, SC, SS

Warning: Disconnect AC Power prior to making any disconnection or connection.

These 3 conditions can cause the TV to shutdown and the power LED to blink 2 times

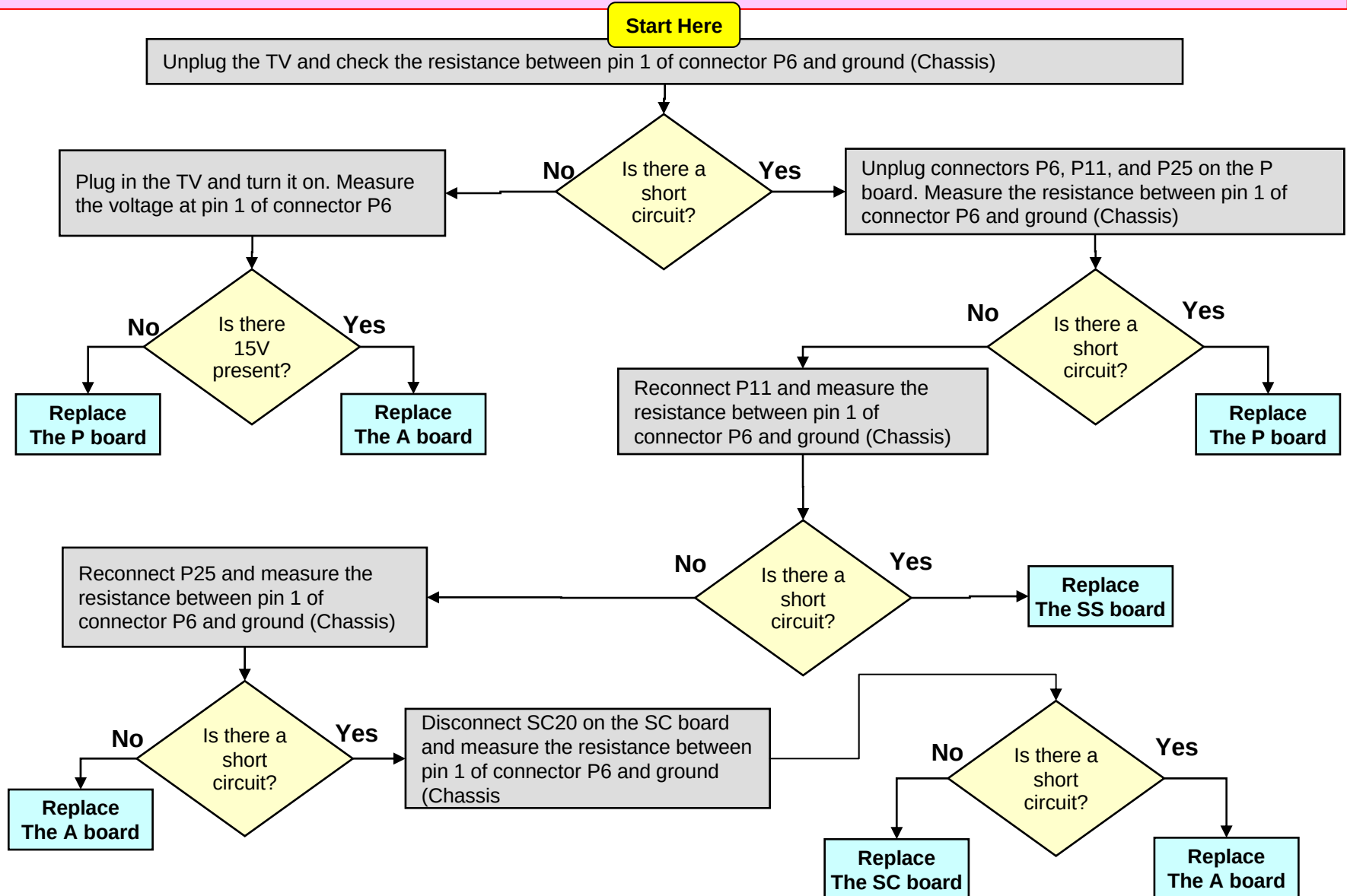
1. Missing P15V
2. A short of the P15V
3. Wrong diagnostic by the A board

TC-P42S1 P15V Distribution



2 Blinks Error Code (All Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



3 Blinks Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
3.3V down SOS	A Board

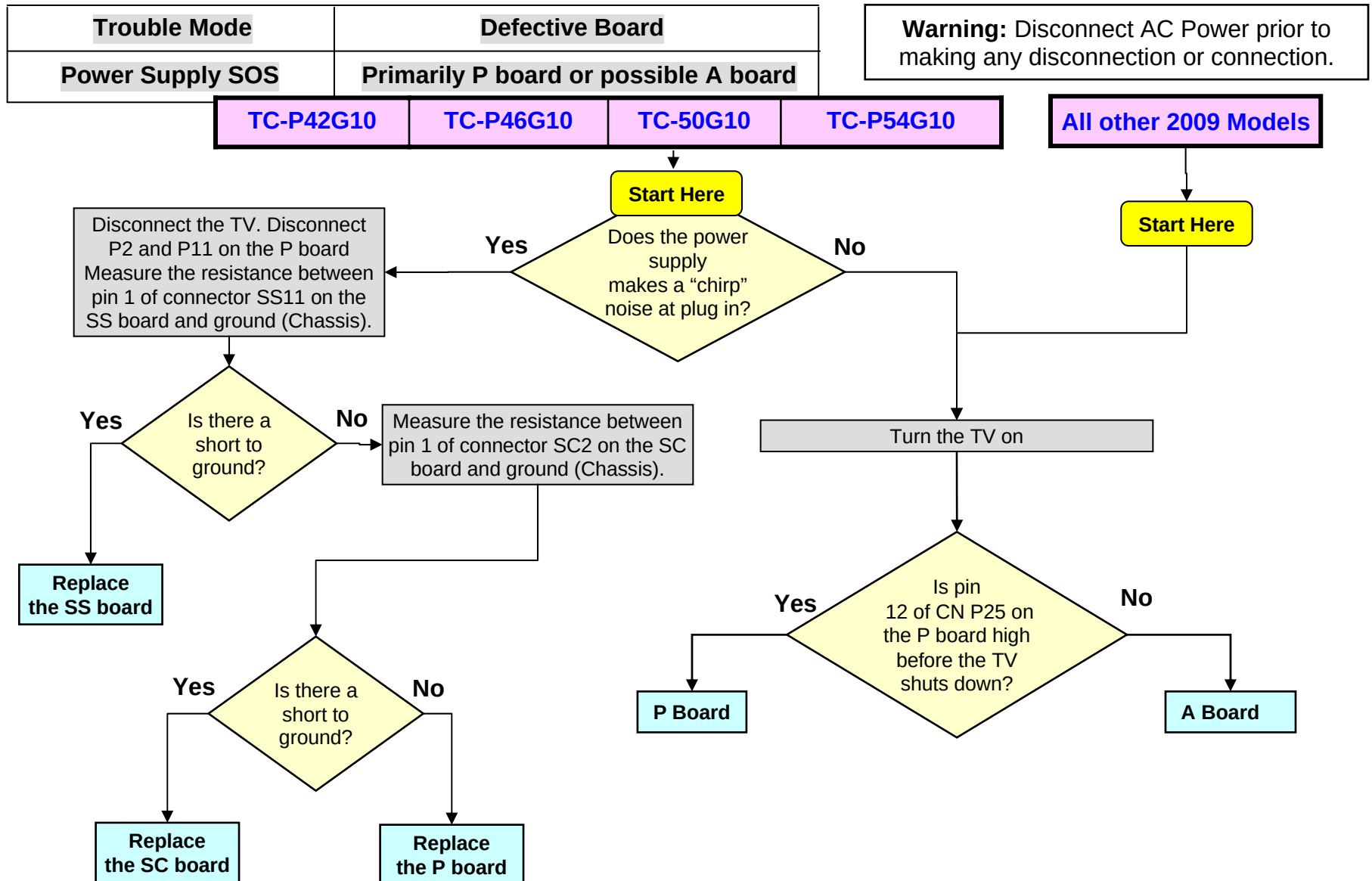
Warning: Disconnect AC Power prior to making any disconnection or connection.

Start Here

Replace the A board

4 Blinks Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



5 Blinks Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

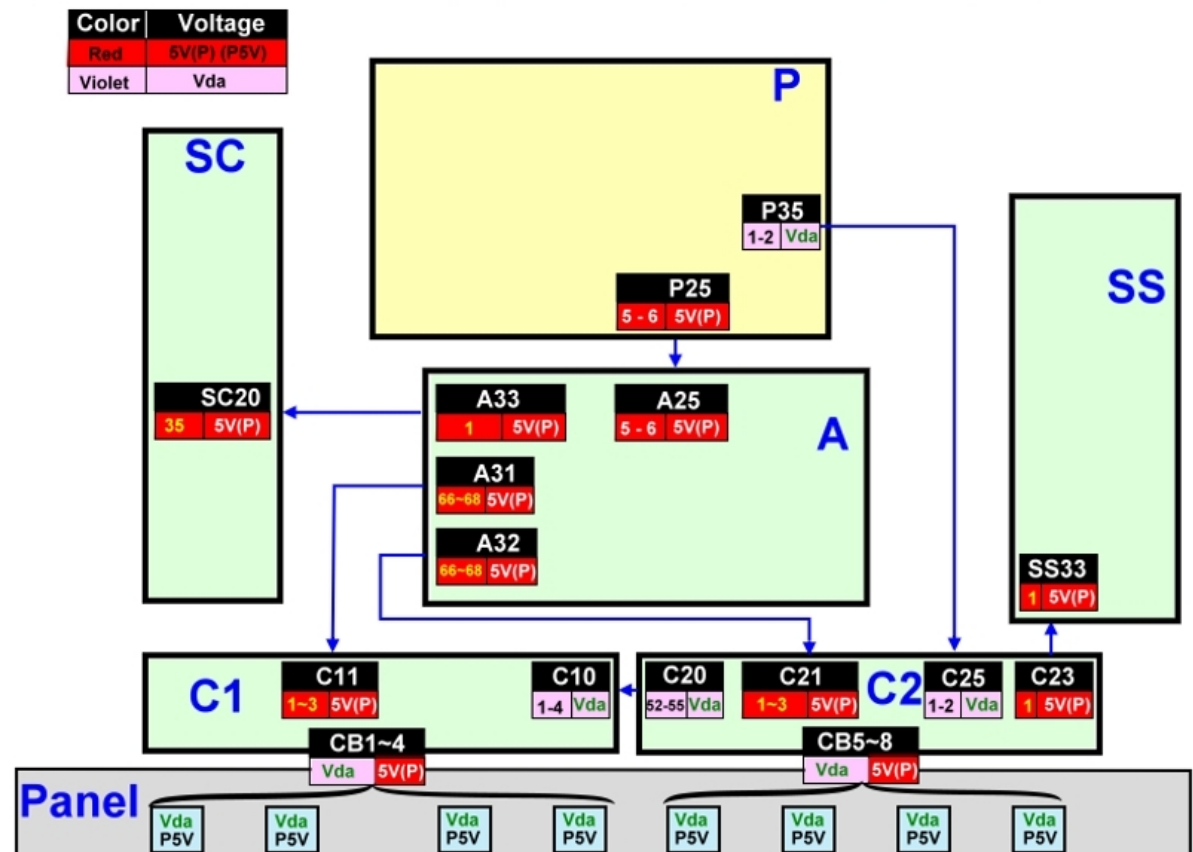
Trouble Mode	Defective Board
5V SOS	P, C, SC, SS board or Panel

Warning: Disconnect AC Power prior to making any disconnection or connection.

These 4 conditions can cause the TV to shut down and the power LED to blink 5 times

P5V Distribution/Vda Distribution

1. Missing P5V
2. A short of the P5V
3. A short of the Vda line
(Note: missing Vda from the P board does not cause 5 blinks)
4. Wrong diagnostic by the A board

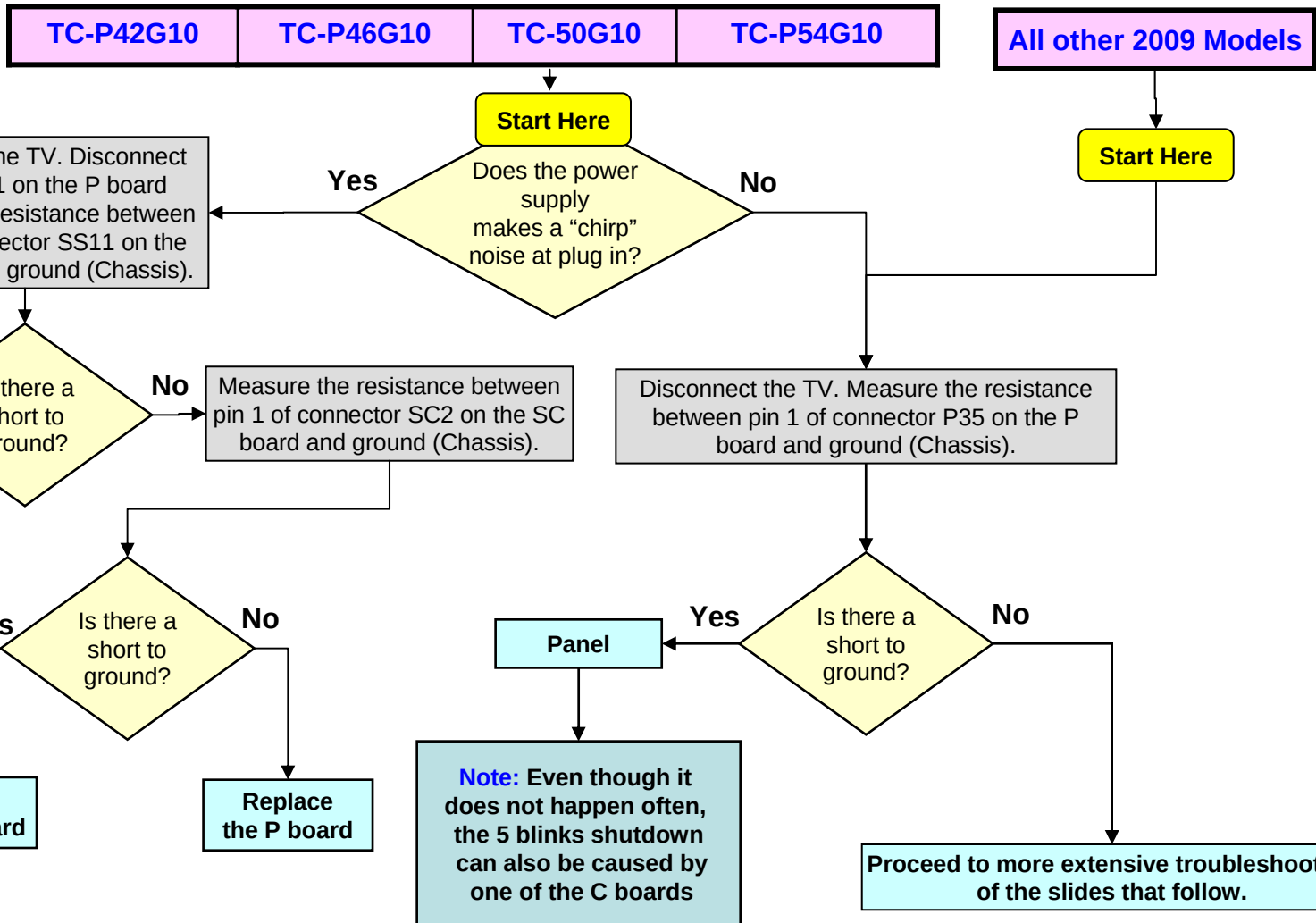


5 Blinks Error Code (All Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

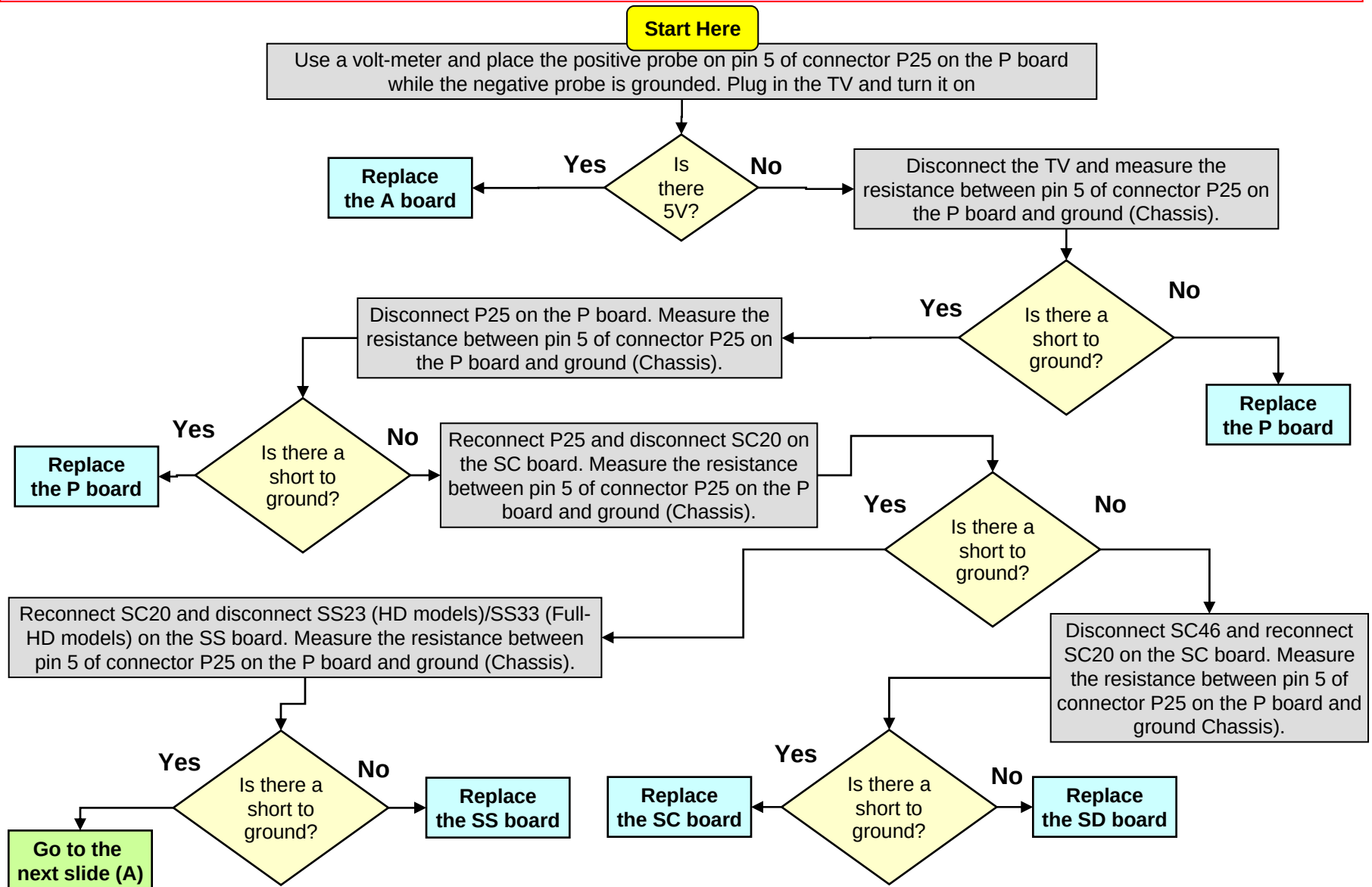
Trouble Mode	Defective Board
5V SOS	P, C, A, SC, SS board or Panel

Warning: Disconnect AC Power prior to making any disconnection or connection.



5 Blinks Error Code (All Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



5 Blinks Error Code Continue

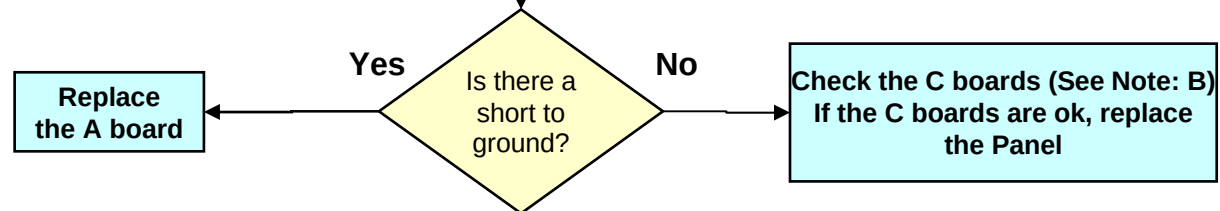
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Continue from the previous slide (A)

Note B: The C board can be checked individually.

Reconnect the ribbon cables from the A board (A31, A32, and A20 for HD models/A33). Disconnect the flex cables between the panel and the C boards tested. Measure the resistance between pin 5 of connector P25 on the P board and ground (Chassis). If there is still a short circuit, change the C board.

Reconnect SS23/SS33 and disconnect A31, A32, and A20 for HD models/A33 on the A board. Measure the resistance between pin 5 of connector P25 on the P board and ground (Chassis).



6 Blinks Error Code (HD Models)

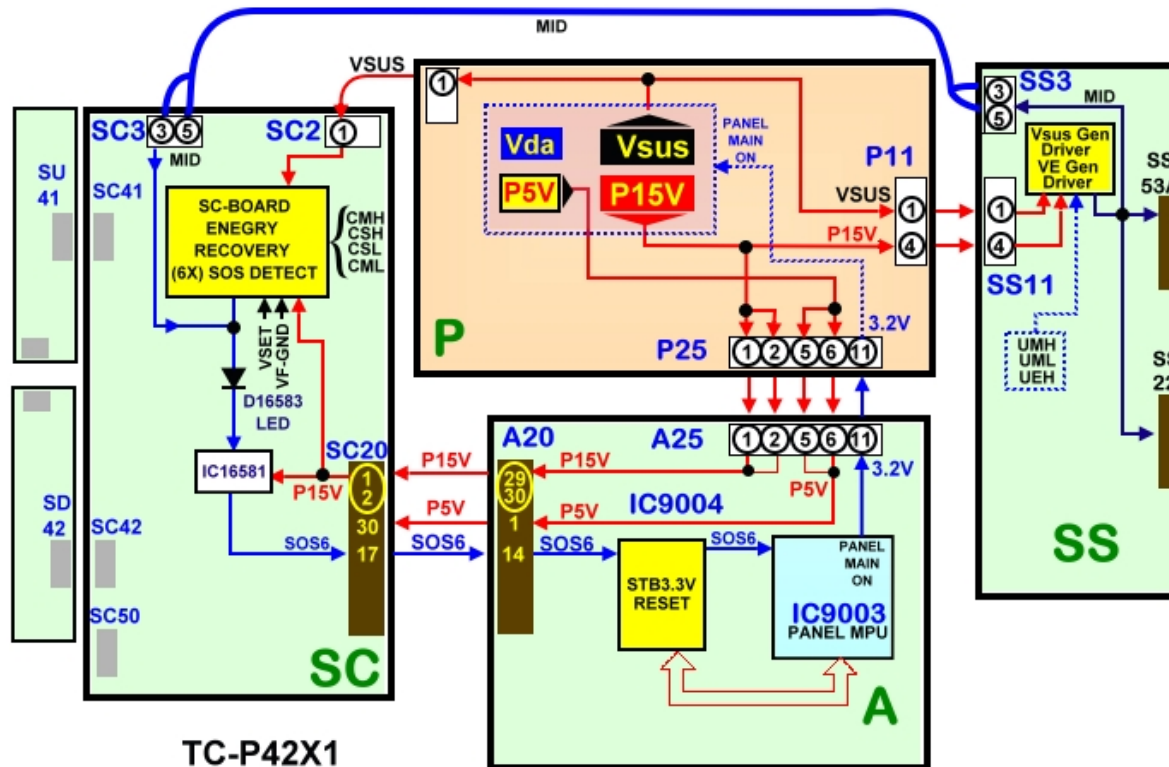
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
SC Energy Recovery Circuit	SC, SS, A, SU,SD, and Loose connections

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

Warning: Disconnect AC Power prior to making any disconnection or connection.

LIST OF MODELS:	TC-P42X1	TC-P42C1	TC-42PX14	TC-P50X1	TC-P50C1	TC-50PX14
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6 Blinks Error Code (42" HD Models) Flowchart

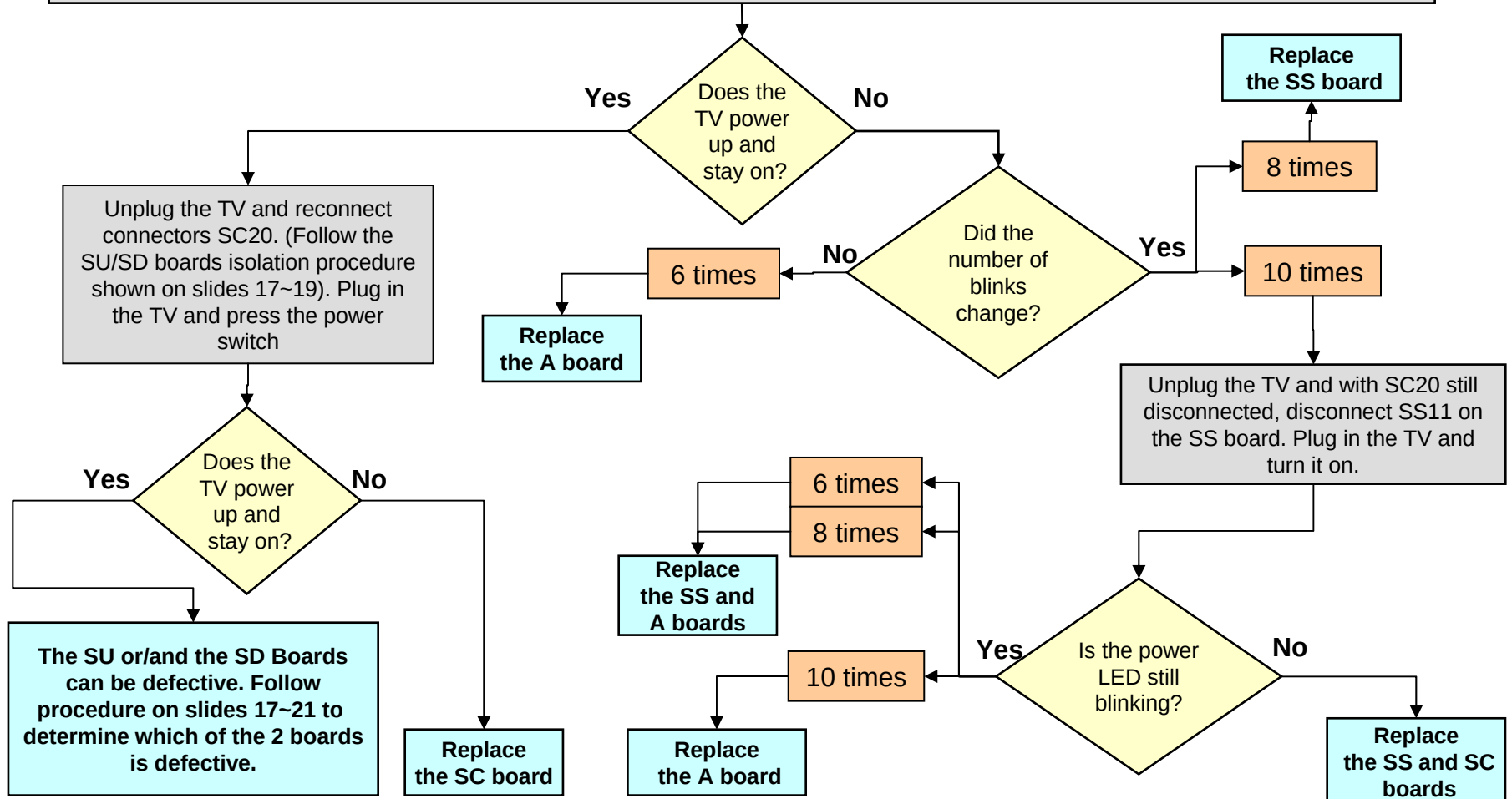
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS: **TC-P42X1** **TC-P42C1** **TC-42PX14**

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

Start Here

Verify that all the cables plugged in to the SC and SS boards are properly seated. Also check the ribbon cables and connectors on the A and C boards. Unplug the TV and disconnect connector SC20 on the SC board. Plug in the TV and turn it on



6 Blinks Error Code (50" HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS:

TC-P50X1

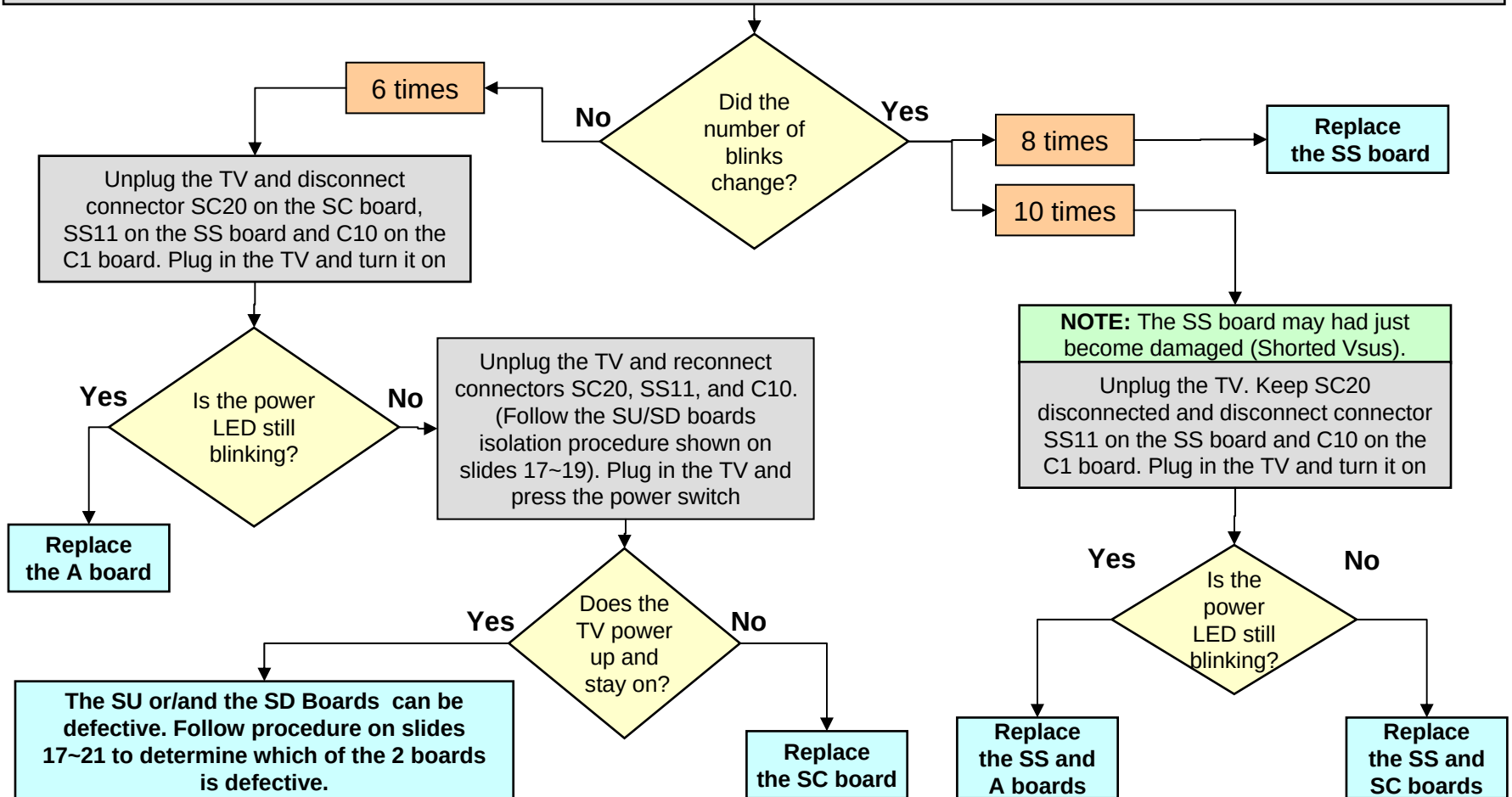
TC-P50C1

TC-50PX14

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

Start Here

Verify that all the cables plugged in to the SC and SS boards are properly seated. Also check the ribbon cables and connectors on the A and C boards. Unplug the TV and disconnect connector SC20 on the SC board. Plug in the TV and turn it on

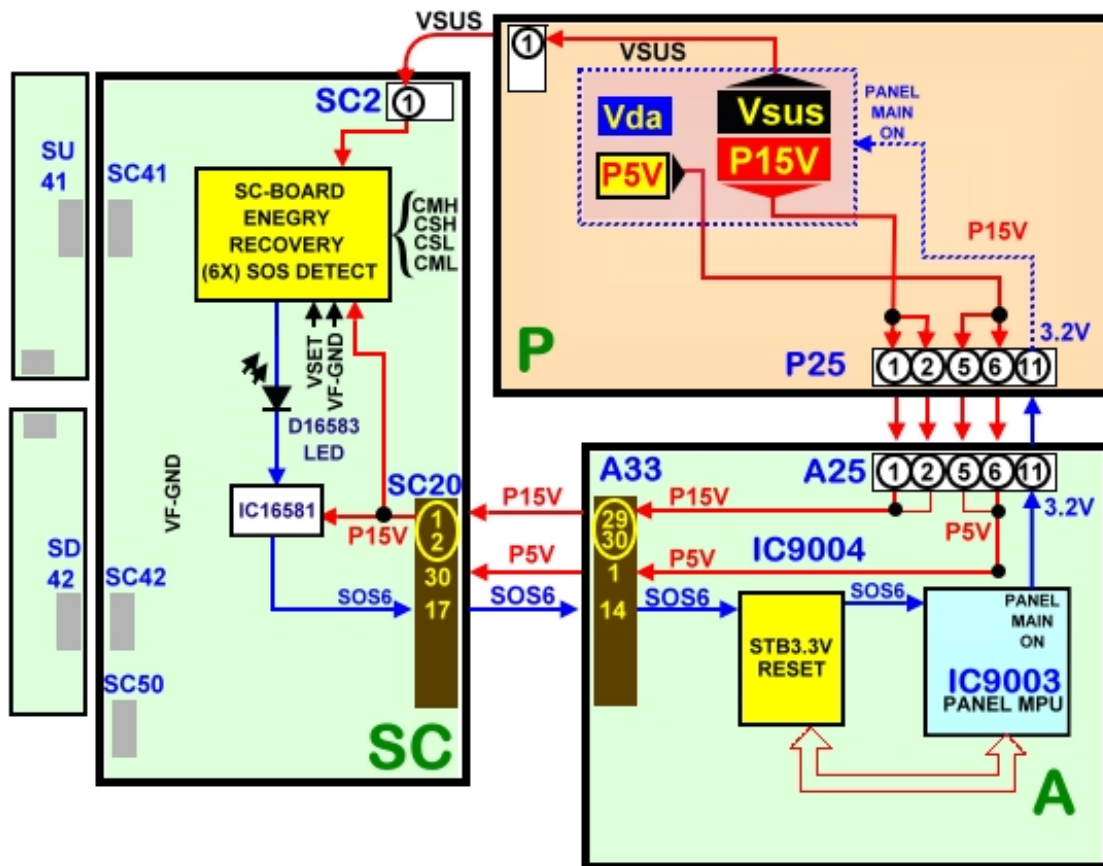


6 Blinks Error Code (Full-HD)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode		Defective Board		Warning: Disconnect AC Power prior to making any disconnection or connection.			
SC Energy Recovery Circuit		SC, A, SU,SD, and Loose connections					

LIST OF MODELS:	TC-P42S1	TC-P42G10	TC-P42U1	TC-P42U1	TC-42PS14	TC-P46S1	TC-P46G10
TC-P46U1	TC-P50S1	TC-P50G10	TC-P50U1	TC-P50V10	TC-50PS14	TC-P54S1	TC-54G10



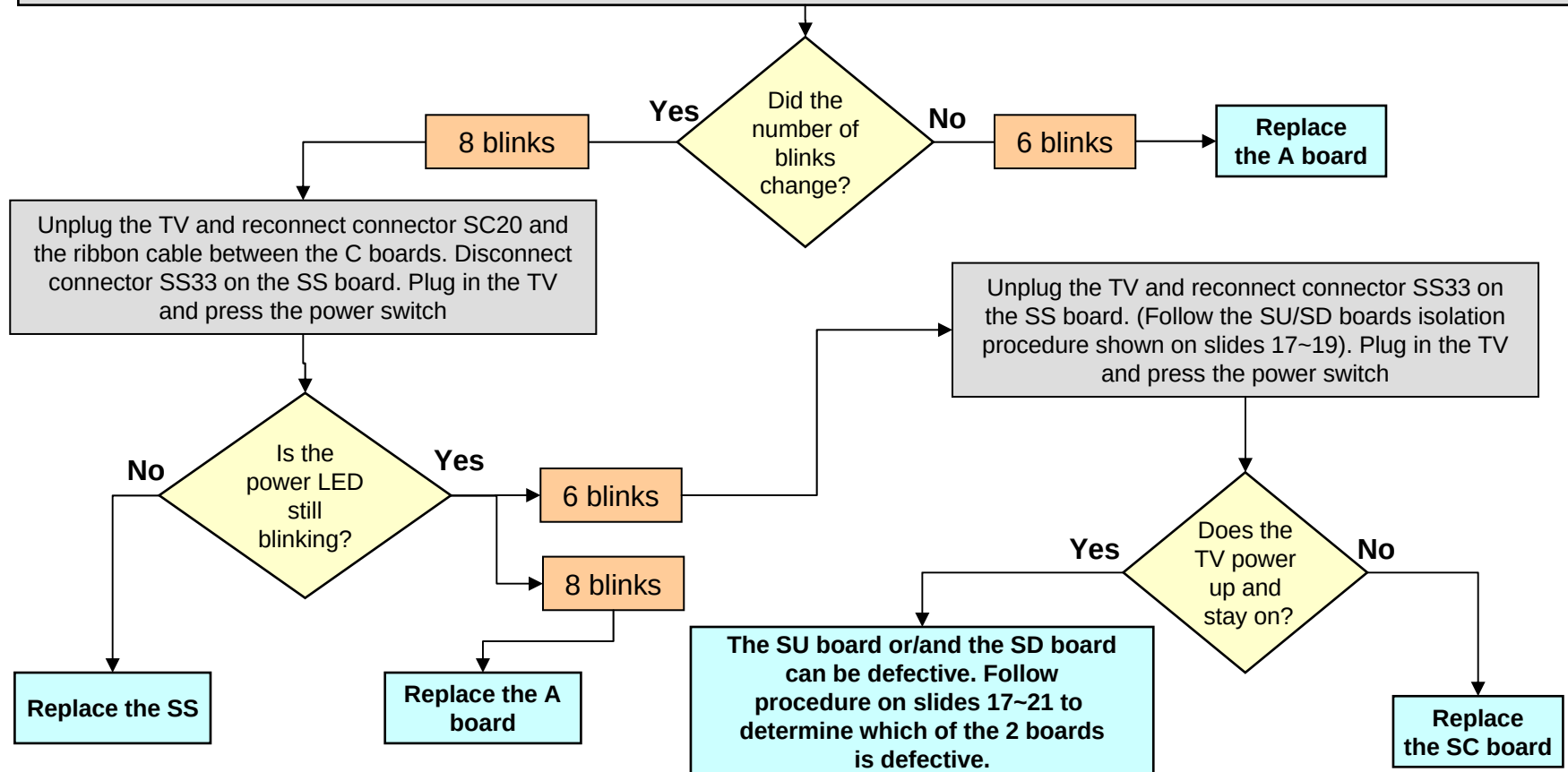
6 Blinks Error Code (Full-HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS	TC-P42S1	TC-P42G10	TC-P42U1	TC-P42U1	TC-42PS14	TC-P46S1	TC-P46G10
TC-P46U1	TC-P50S1	TC-P50G10	TC-P50U1	TC-P50V10	TC-50PS14	TC-P54S1	TC-54G10

Start Here

Verify that all the cables plugged in to the SC and SS boards are properly seated. Also check the ribbon cables and connectors on the A and C boards. Unplug the TV and disconnect connector SC20 on the SC board and the ribbon cable between connector C10 on the C1 board and connector C20 of the C2 board. Plug in the TV and turn it on



7 Blinks Error Code (1 of 4)

Trouble mode	Defective Boards (Possibility)
SC Floating Section SOS	SU, SD, SC, A, P, & Panel

Warning: Disconnect AC Power prior to making any disconnection or connection.

LIST OF MODELS:	All 2009 Models
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Preparation:

Disconnect AC Power prior to making any disconnection or connection.

Wait at least 2 minutes before the removal of any connector.

Note: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Remove the front cabinet and expose the panel to a bright light for a thorough visual inspection. Check for cracks and blown pixels or any other abnormalities.

Check the ICs on the SU and SD boards for blown hole on the surface.

Note: In some models it is not possible to check if these ICs are blown because they use surface-mount heat sinks that are glued to the surface of the ICs.

7 Blinks Error Code (2 of 4)

Start Here

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

1. Remove the front cabinet and check for cracks and blown pixels. (For front cabinet removal procedure go to slide 24).
2. Check the ICs on the SU and SD boards for blown hole on the surface. (Go to slide 25 to see pictures)
3. Perform the SU, SD, and SC boards resistance test procedure shown on slides 26~31. Match the result with one of the following boxes (A~D) and follow the instructions at the bottom of the page.

A

Board	Result	Board	Result
SU	Bad	SU	OK
SD	OK	SD	Bad
SC	OK	SC	OK

Board	Result
SU	Bad
SD	Bad
SC	OK

Follow this procedure if the SU board and/or the SD board are bad while the SC board measures OK

Go to the next slide

B

Board	Result	Board	Result
SU	OK	SU	Bad
SD	Bad	SD	Bad
SC	Bad	SC	Bad

Board	Result
SU	Bad
SD	OK
SC	Bad

Follow this procedure if the SU board and/or the SD board are bad while the SC board is also bad

Replace the SU, SD, and SC boards

C

Board	Result
SU	OK
SD	OK
SC	Bad

Follow this procedure if only the SC board is bad

Replace the SC board.

D

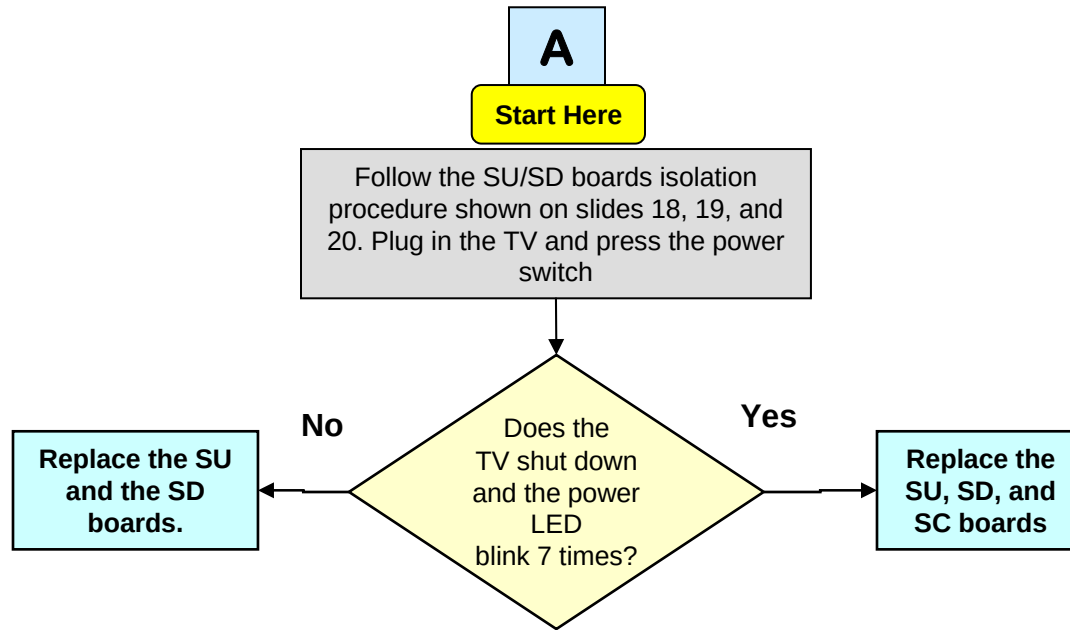
Board	Result
SU	OK
SD	OK
SC	OK

Follow this procedure when all 3 boards check OK

Go to the Slide #16

7 Blinks Error Code (3 of 4)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



7 Blinks Error Code (4 of 4)

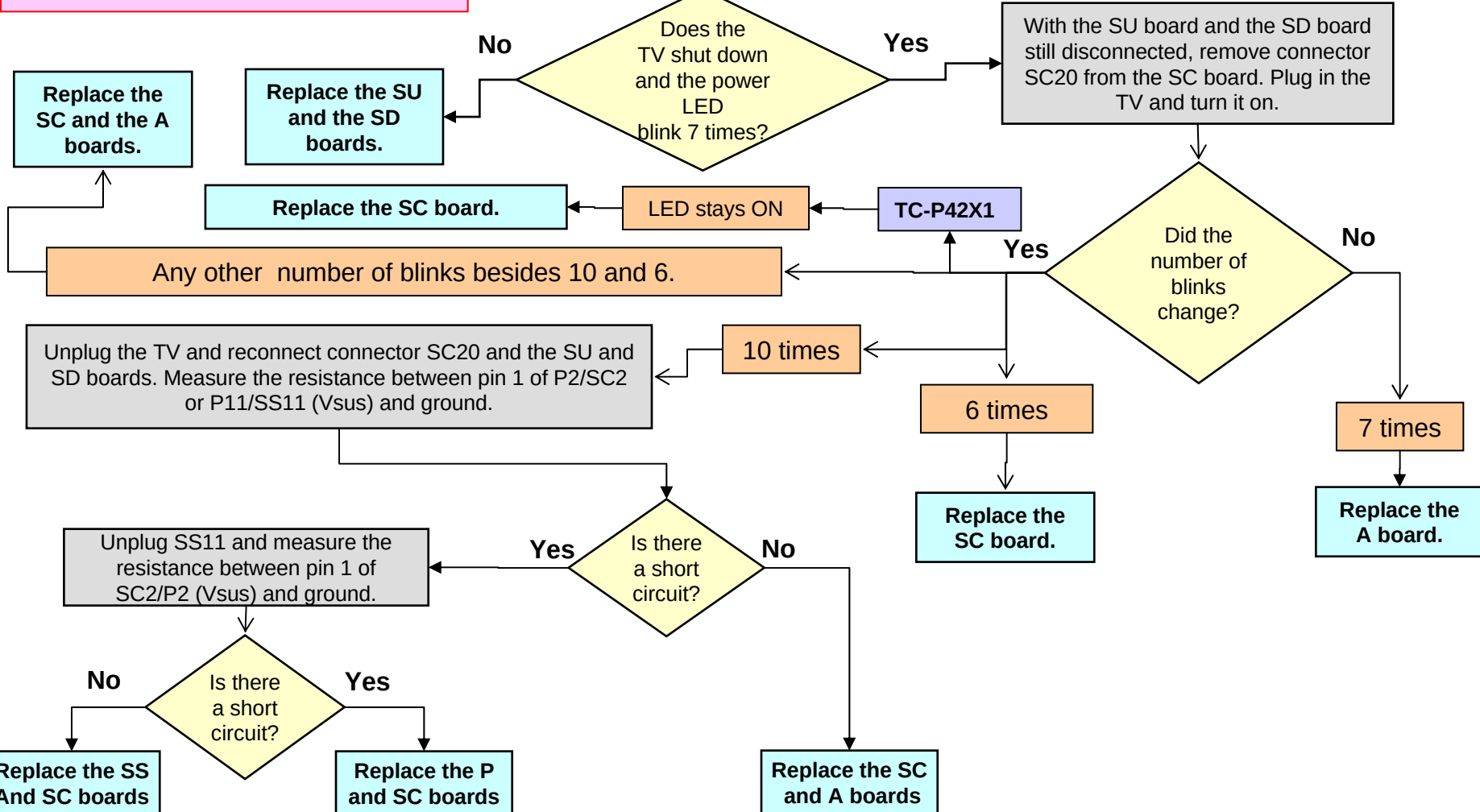
D

Start Here

Caution: If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

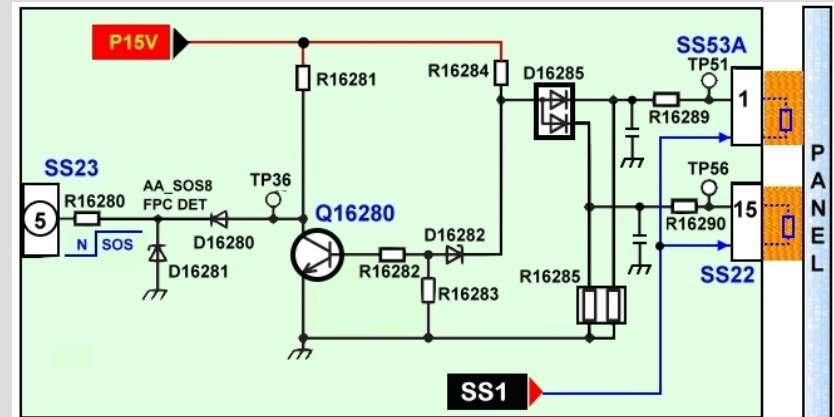
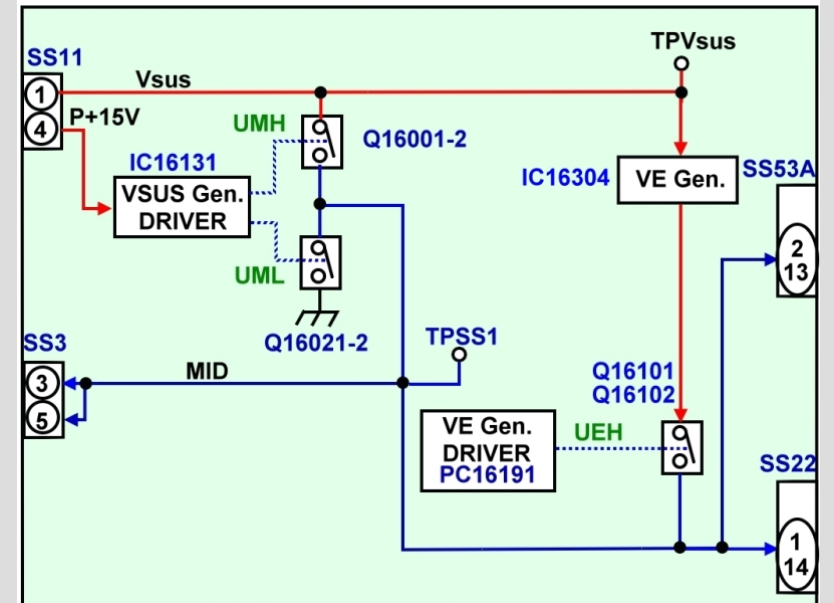
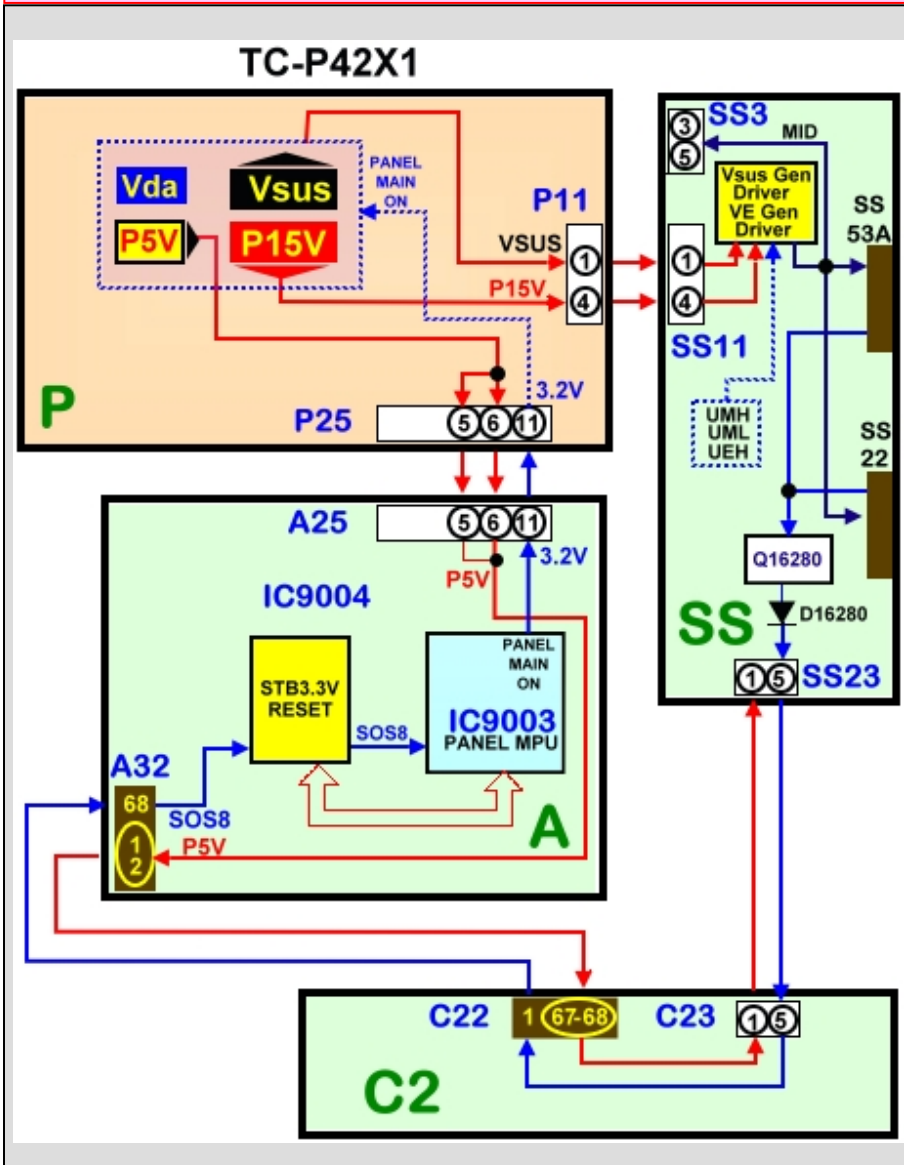
Follow the SU/SD boards isolation procedure shown on slides 18, 19, and 20. Plug in the TV and press the power switch

Warning: Disconnect AC Power prior to making any disconnection or connection.



8 Blinks Error Code (HD Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



SS_Flexible Printed Circuit (FPC)_Detect (SOS8_SS) (TC-P42X1)

8 Blinks Error Code (HD Models)

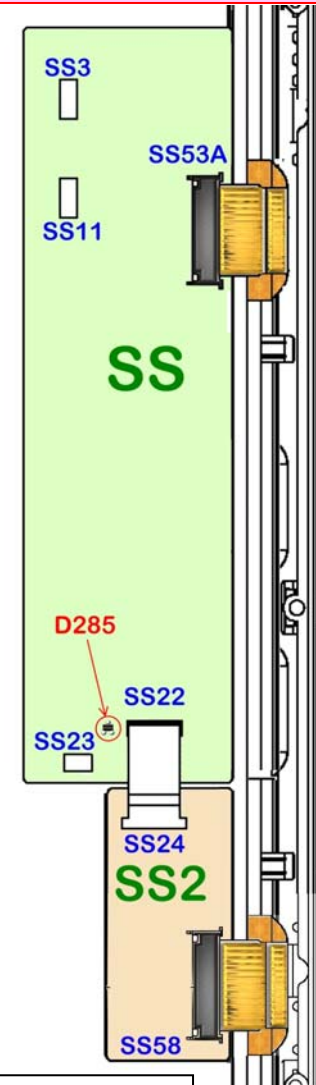
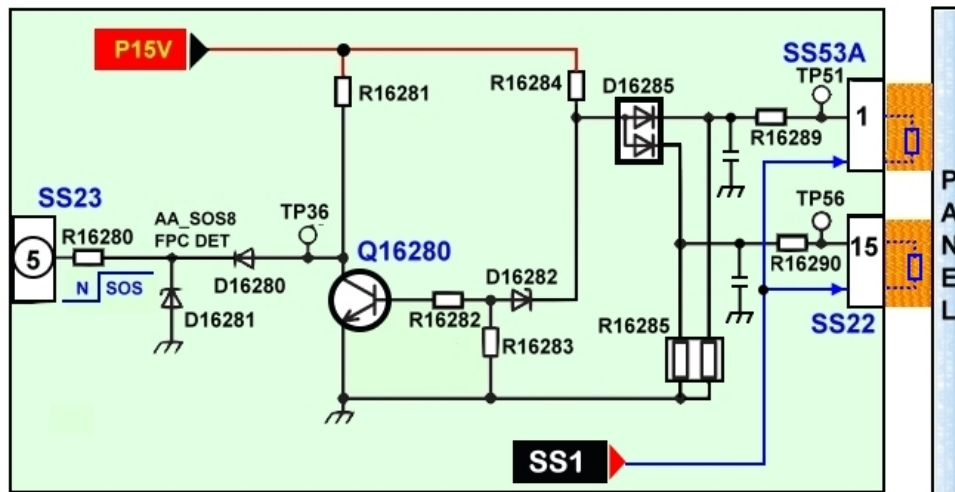
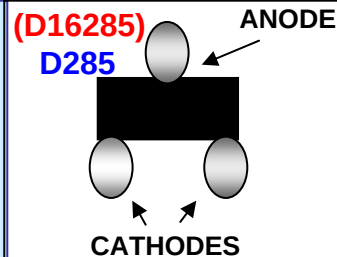
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
Driver SOS3/SS_FPC_Detect	SS, A, SS2, P, and Loose connections

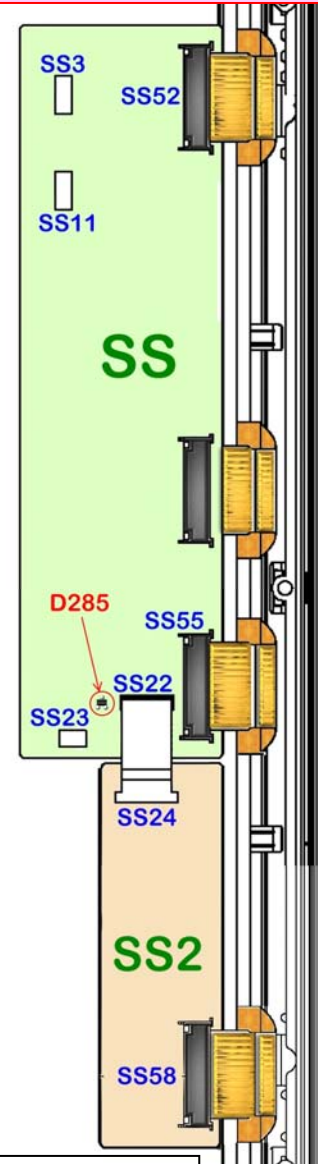
42" HD Models ([TC-P42X1](#) - [TC-P42C1](#) - [TC-42PX14](#)) Make sure that connectors SS61, SS64, and SS21 on the SS board and connectors SS24, and SS58 on the SS2 board are properly seated.

50" HD Models ([TC-P50X1](#) - [TC-P50C1](#) - [TC-50PX14](#)) Make sure that connectors SS53, SS55, SS56, and SS21 on the SS board and connectors SS24, and SS58 on the SS2 board are properly seated.

Note: D285 (D16285 on the Service Manual) is located approx. $\frac{1}{4}$ of an inch away from the left side of connector SS22.



42" HD



50" HD

8 Blinks Error Code (HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS:

TC-P42X1

TC-P42C1

TC-42PX14

TC-P50X1

TC-P50C1

TC-50PX14

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

Start Here

Verify that all the flex-cables between the panel and the SS/SS2 boards are properly seated and the connectors are properly locked. Unplug the TV and disconnect connector SS23 from the SS board. Plug in the TV and turn it on

Yes

Does the TV power up and stay on?

No

Unplug the TV and reconnect SS23. Use a volt-meter and place the positive probe on the anode of D285 on the SS board (See previous slide for location), while the negative probe is grounded.

Yes

Is there approx. 7.2V at the anode of D285 on the SS board?

No

Replace the panel

Replace SS board

Note: Before replacing the panel, double check all the flex-cables between the panel and the SS/SS2 boards. Make sure they are properly seated and that the connectors are properly locked.

No

Did the number of blinks change to 6 or 7 blinks?

Yes

8 blinks

Replace the A board

Unplug the TV and reconnect SS23. Remove the ribbon cables from connector A31, A32, and A20 on the A board. Plug in the TV and turn it on

Yes

Does the TV power up and stay on with the SC LED on?

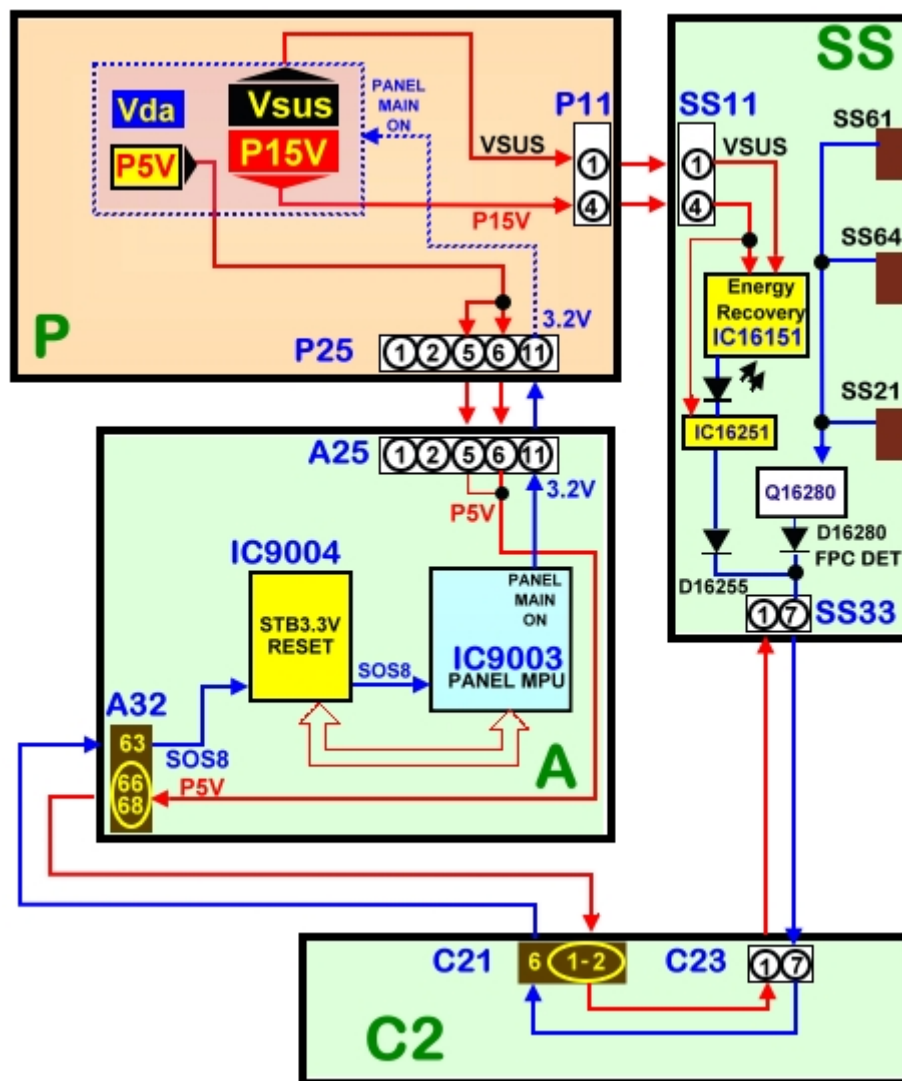
No

Replace the A board

Replace the P board

8 Blinks Error Code (Full HD Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



8 Blinks Error Code (Full-HD Models)

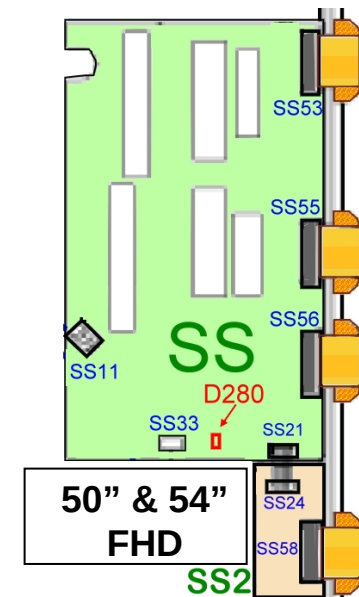
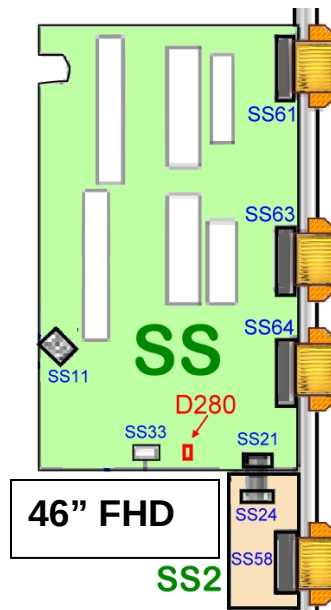
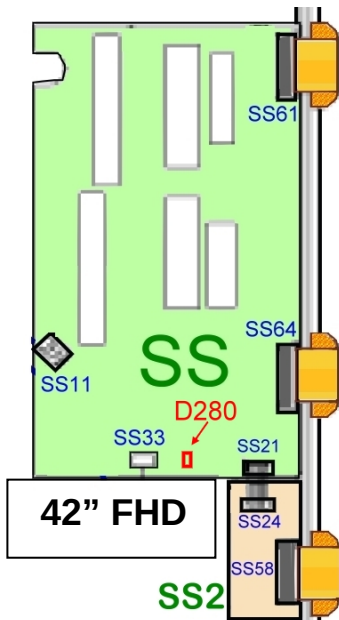
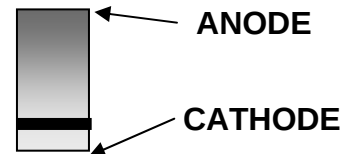
If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
Driver SOS3/SS_FPC_Detect	SS, A, SS2, P, and Loose connections
42" Full HD Models (TC-P42S1 - TC-P42G10 - TC-P42U1 - TC-42PS14). Make sure that connectors SS61, SS64, and SS21 on the SS board and connectors SS24, and SS58 on the SS2 board are properly seated.	
46" Full HD Models (TC-P46S1 - TC-P46G10 - TC-P46U1). Make sure that connectors SS61, SS63, SS64, and SS21 on the SS board and connectors SS24, and SS58 on the SS2 board are properly seated.	
50" and 54" Full HD Models (TC-P50S1 - TC-P50G10 - TC-P50U1 - TC-P50V10 - TC-50PS14 - TC-P54S1 - TC-54G10). Make sure that connectors SS53, SS55, SS56, and SS21 on the SS board and connectors SS24, and SS58 on the SS2 board are properly seated.	

Warning: Disconnect AC Power prior to making any disconnection or connection.

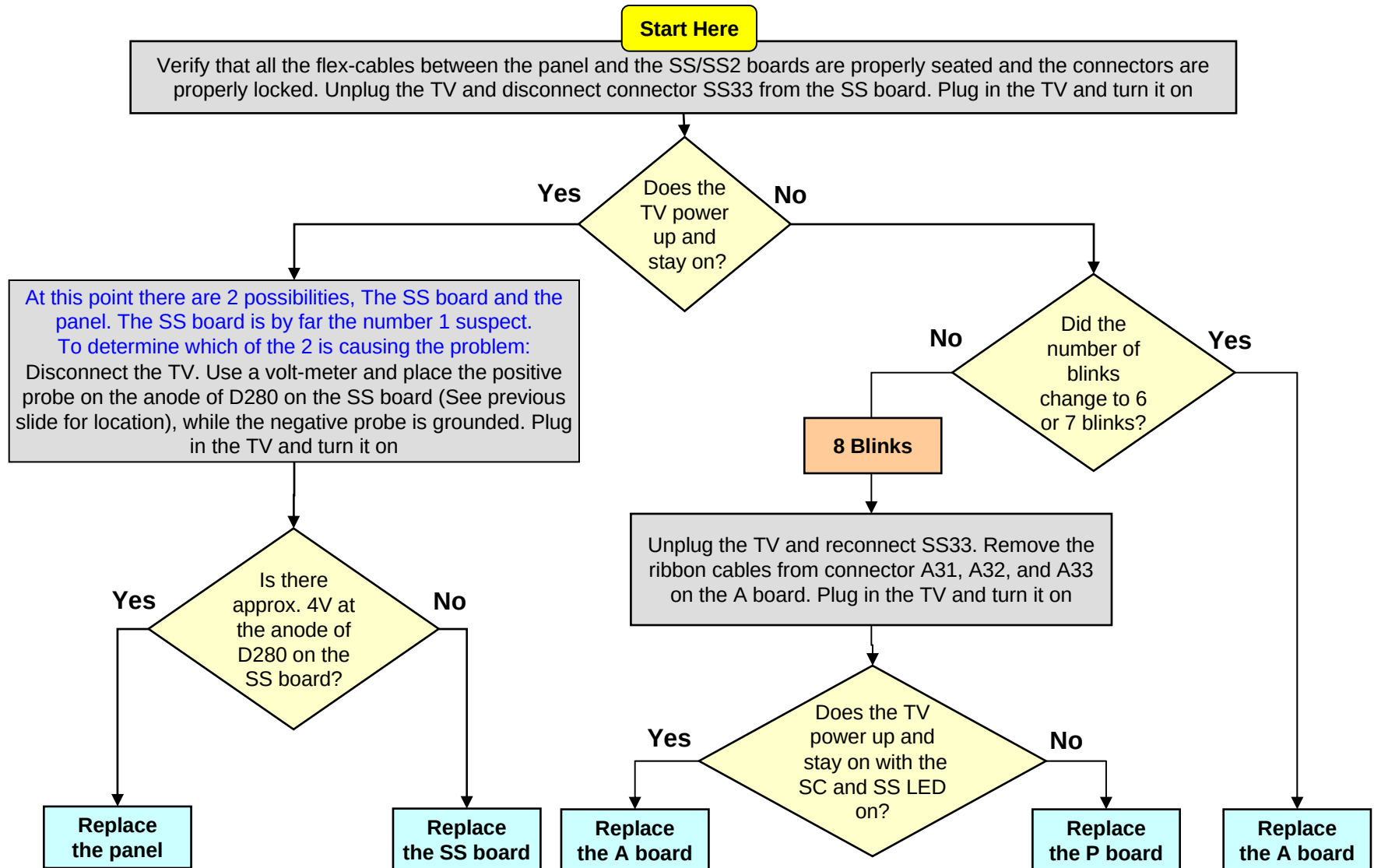
Note: D280 (D16280 on the Service Manual) is located less than inch away from the right side of connector SS33

D280
(D16280)



8 Blinks Error Code (Full-HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.



9 Blinks Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
Panel Status/Communication	A Board

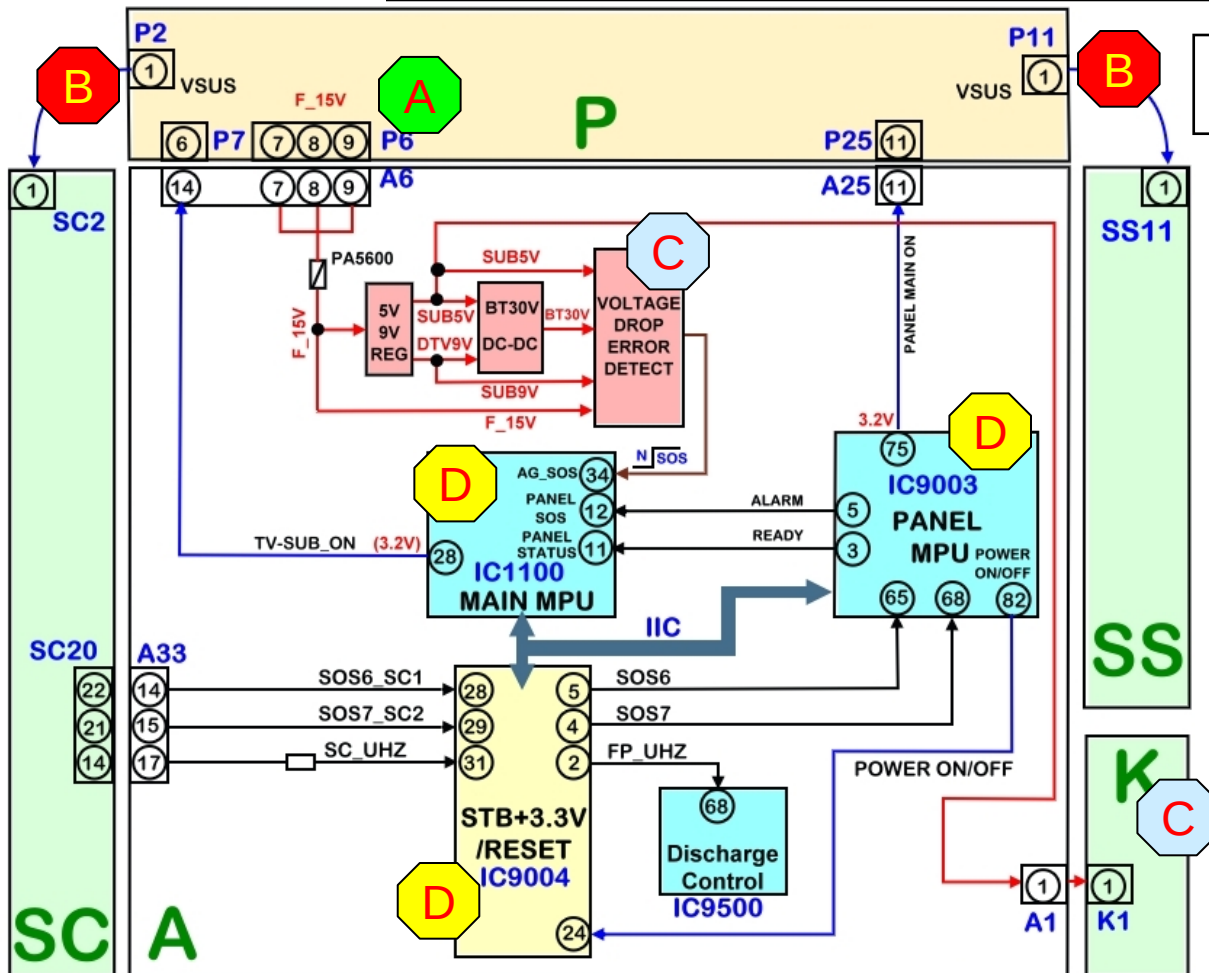
Warning: Disconnect AC Power prior to making any disconnection or connection

Replace the A board.

10 Blinks Error Code (HD Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
F-STB15V, SUB9V, SUB5V, BT30V	A, P, Loose connections
Make sure that connectors P6/A6 is properly seated	



Warning: Disconnect AC Power prior to making any disconnection or connection.

IMPORTANT: Unlike previous generations, there's no 10 blinks error code at plug-in for 2009 models. When the A board is replaced, the TV turns on in aging mode by itself at plug in.

What can possibly cause 10 blinks

- A. Missing/Shorted F_15V
- B. Shorted Vsus
- C. Missing/Shorted SUB5V, SUB9V, BT30V.
- D. IC1100, IC9003, IC9004
- E. Possibly SU and SD boards

10 Blinks Error Code (HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS:

TC-P42X1

TC-P42C1

TC-42PX14

TC-P50X1

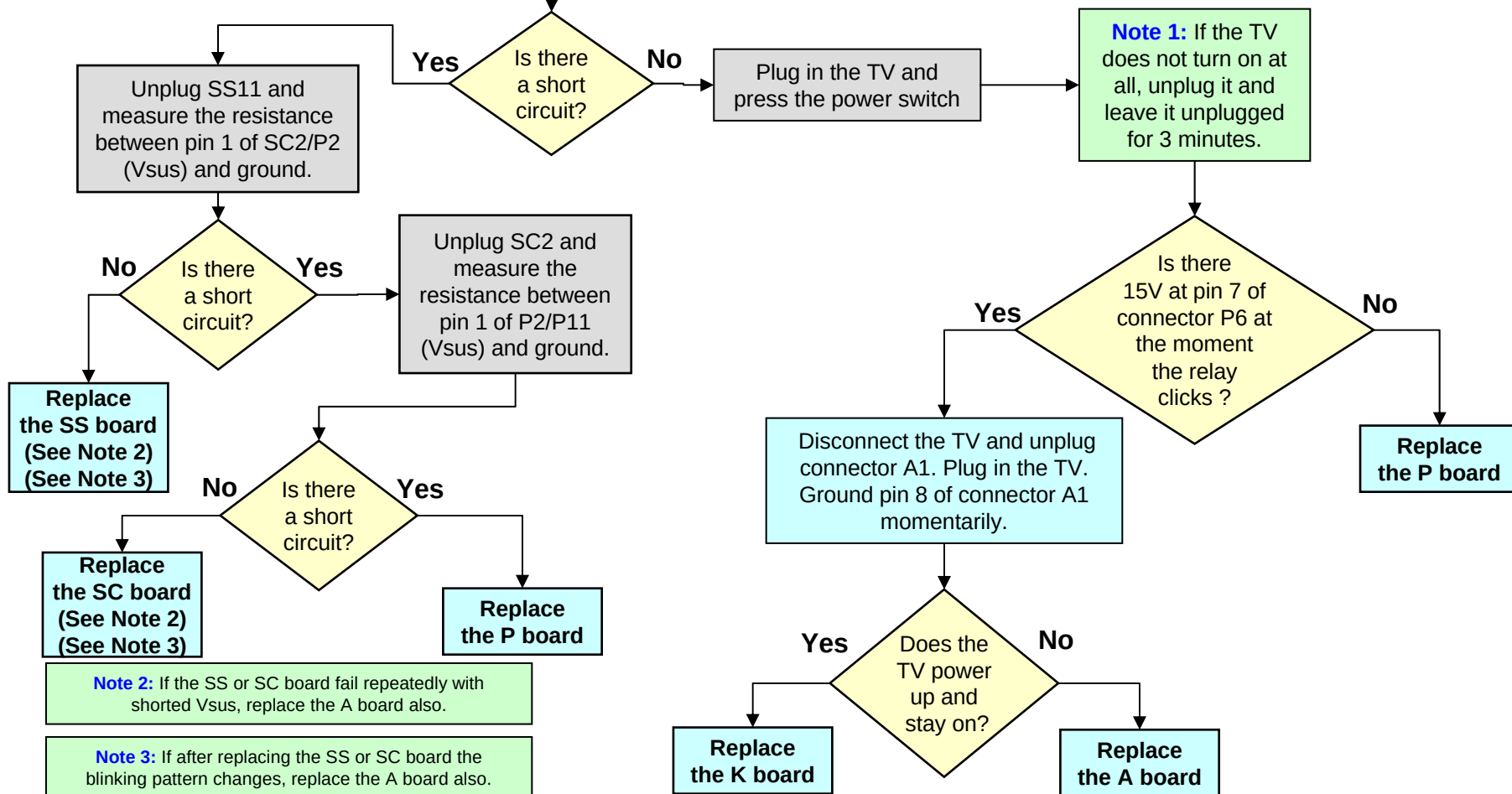
TC-P50C1

TC-50PX14

Start Here

Unplug the TV. Measure the resistance between pin 1 of P2/SS2 or P11/SS11 (Vsus) and ground.

CAUTION: The TV power should not be turned on while SC2 is disconnected. This could damage the SS board.

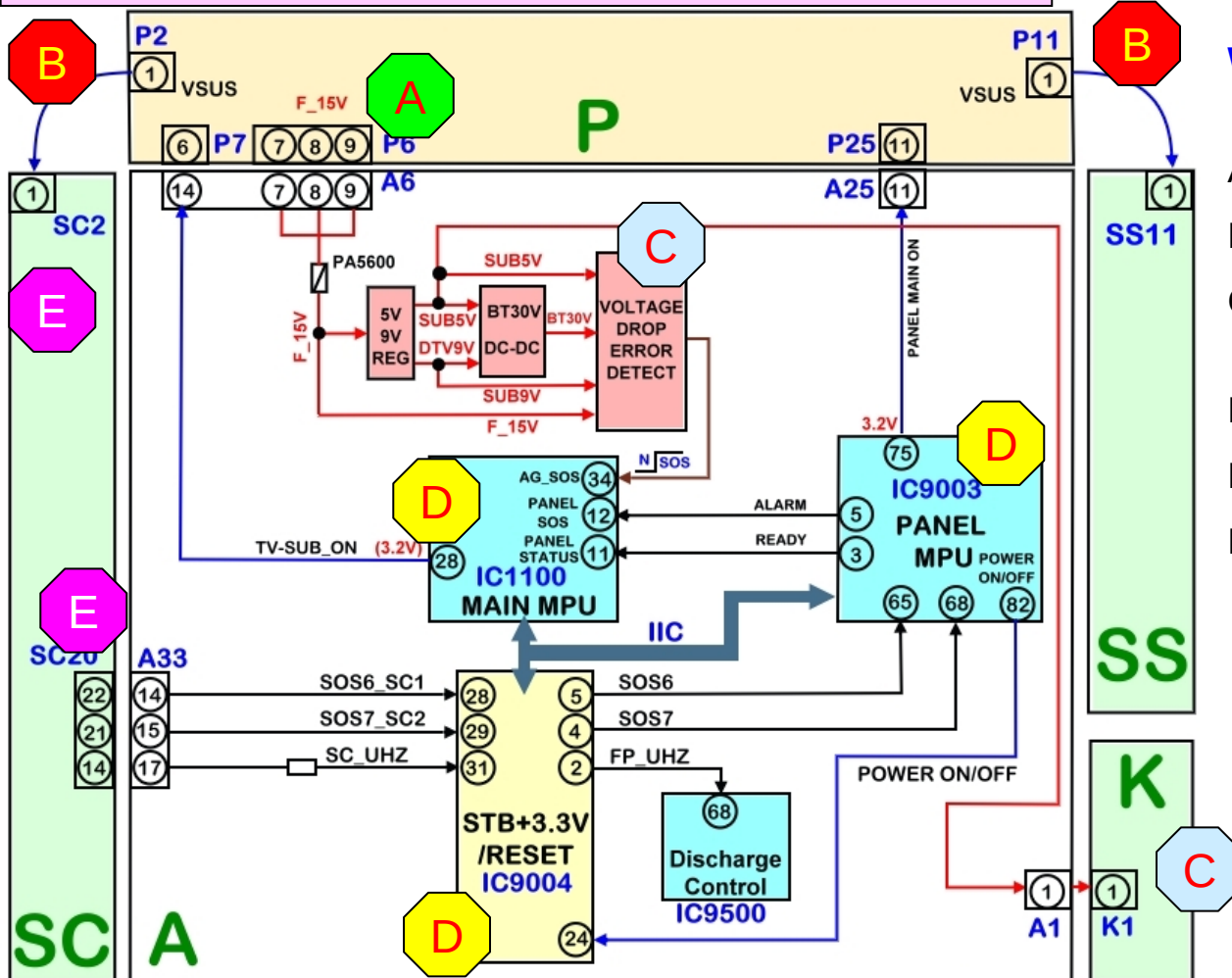


10 Blinks Error Code (Full-HD Models)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board
F-STB15V, SUB9V, SUB5V, BT30V, Shorted Vsus	SS, P, A, SC, SU, SD, K
Make sure that connectors SC20/A33, SC2/P2, P6/A6 are properly seated	

Warning: Disconnect AC Power prior to making any disconnection or connection.



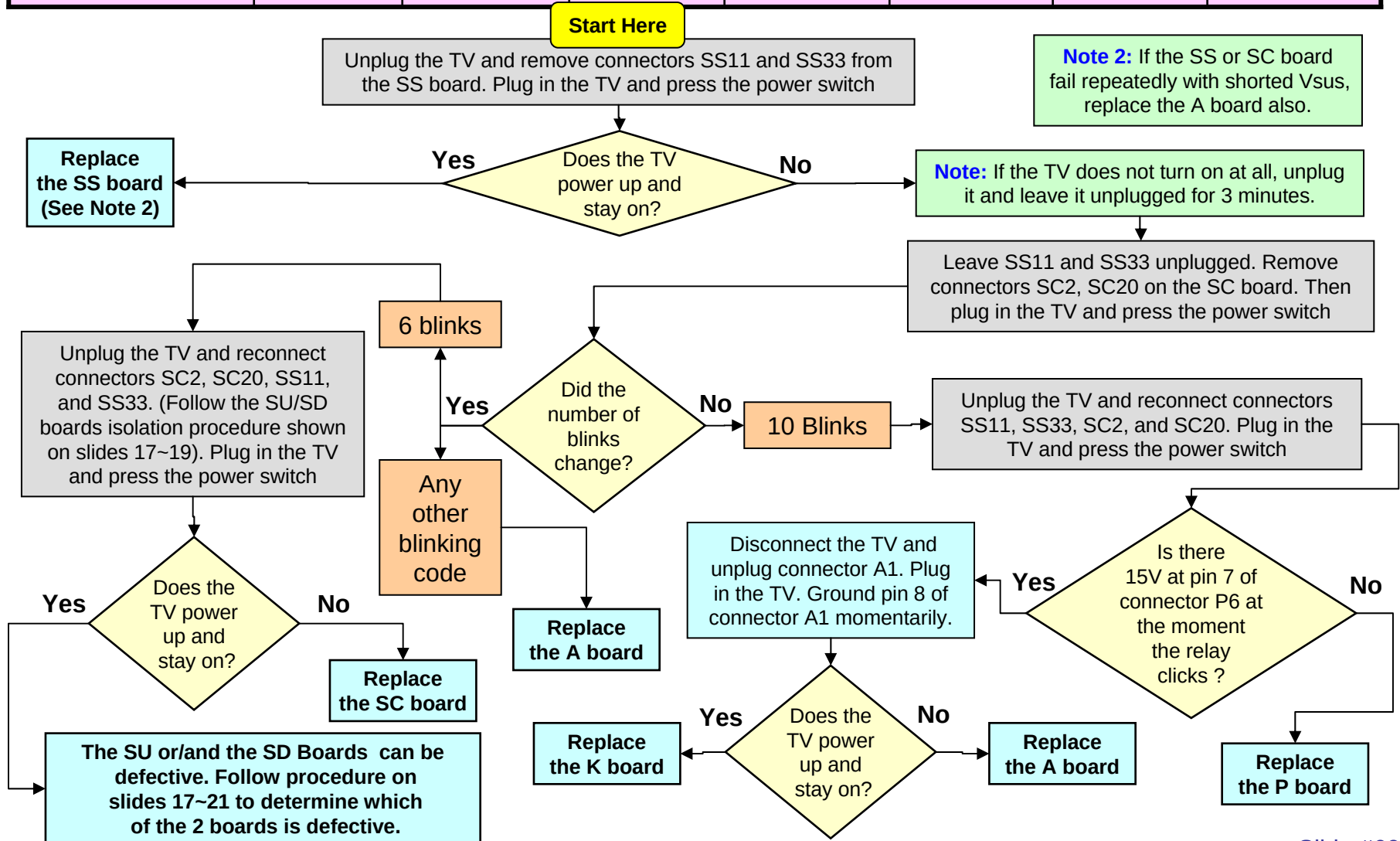
What can possibly cause 10 blinks

- A. Missing/Shorted F_15V
- B. Shorted Vsus
- C. Missing/Shorted SUB5V, SUB9V, BT30V.
- D. IC1100, IC9003, IC9004
- E. Unplugged SC20, SC2
- F. Possibly SU and SD boards

10 Blinks Error Code (Full HD Models) Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

LIST OF MODELS	TC-P42S1	TC-P42G10	TC-P42U1	TC-P42U1	TC-42PS14	TC-P46S1	TC-P46G10
TC-P46U1	TC-P50S1	TC-P50G10	TC-P50U1	TC-P50V10	TC-50PS14	TC-P54S1	TC-54G10

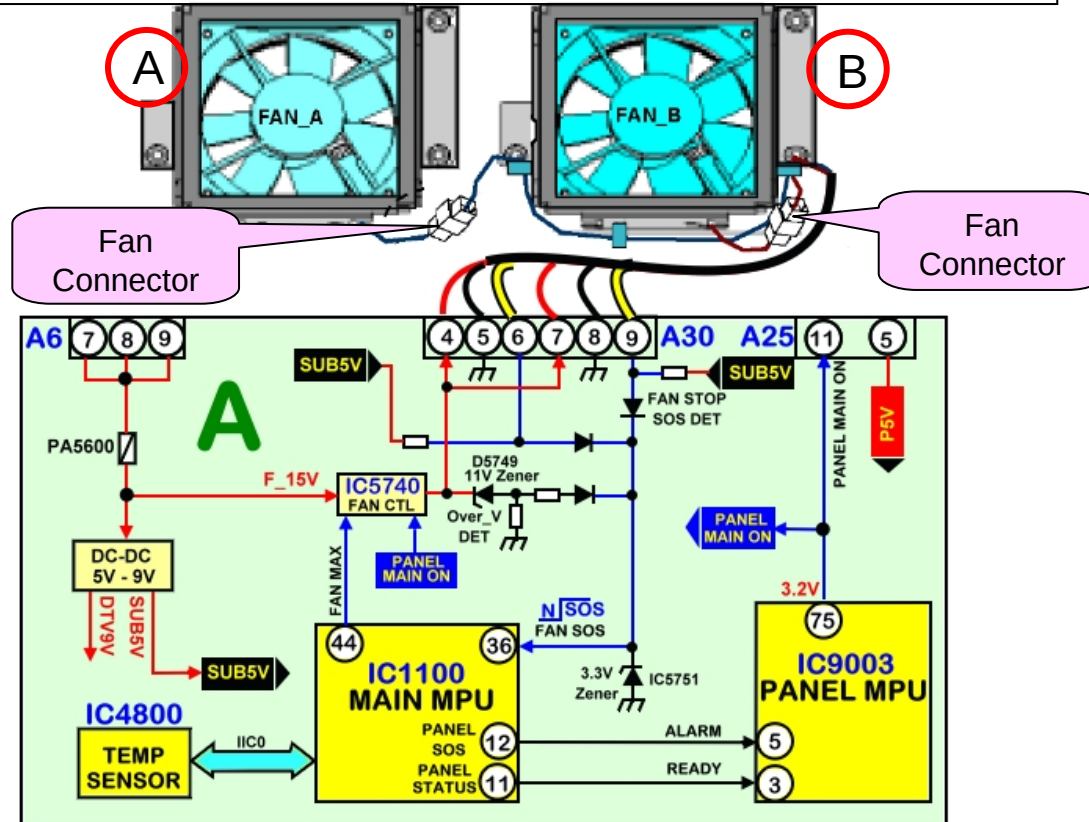
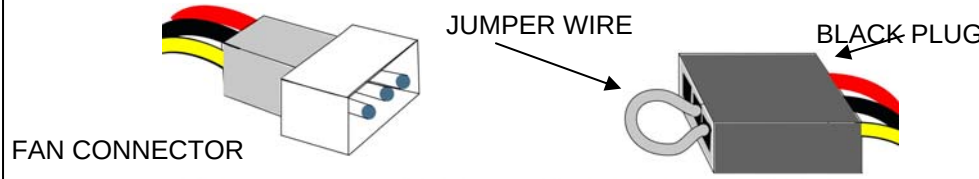


11 Blinks Error Code (Full-HD Models Only)

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board (Possibility)
Fan SOS	Fans, A Board, Connections

NOTE A: Use a piece of wire, the size of a ¼ watt resistor's leads as a jumper.

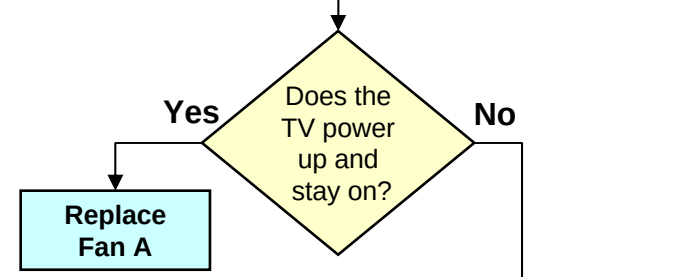


Warning: Disconnect AC Power prior to making any disconnection or connection

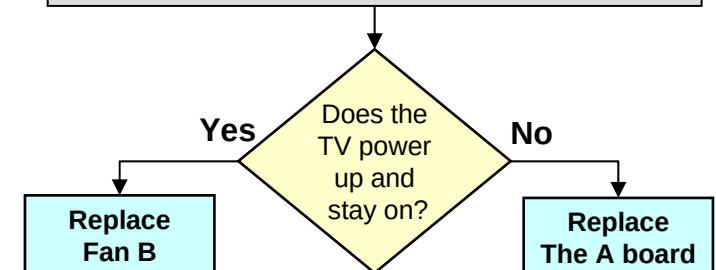
Make sure that connector A30 is properly seated

Start Here

Unplug the TV and disconnect the connector from Fan A. Place a jumper wire (NOTE "A") between the center pin (Black wire) and the pin with the yellow wire on the black plug. Plug in the TV and press the power switch



Unplug the TV and reconnect Fan. Disconnect the connector from Fan B. Place a jumper wire (NOTE "A") between the center pin (Black wire) and the pin with the yellow wire on the black plug. Plug in the TV and press the power switch

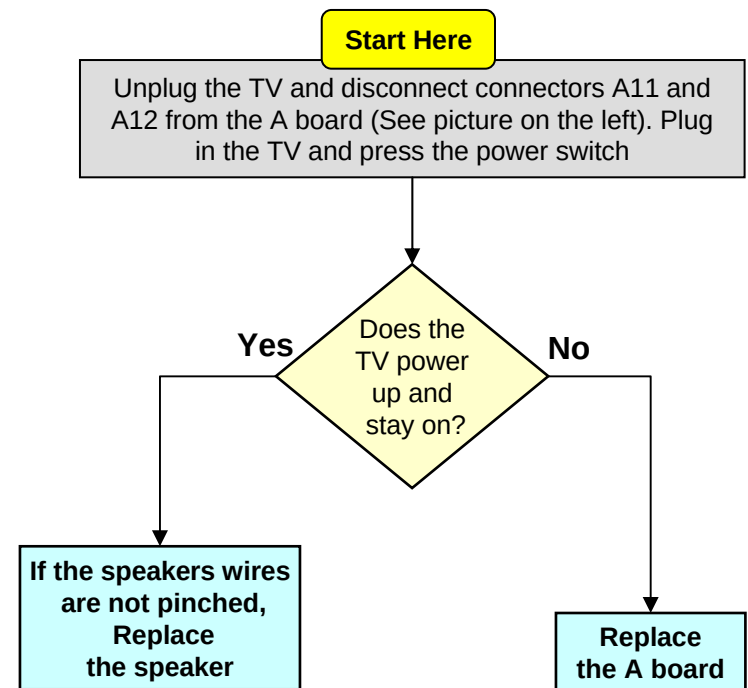
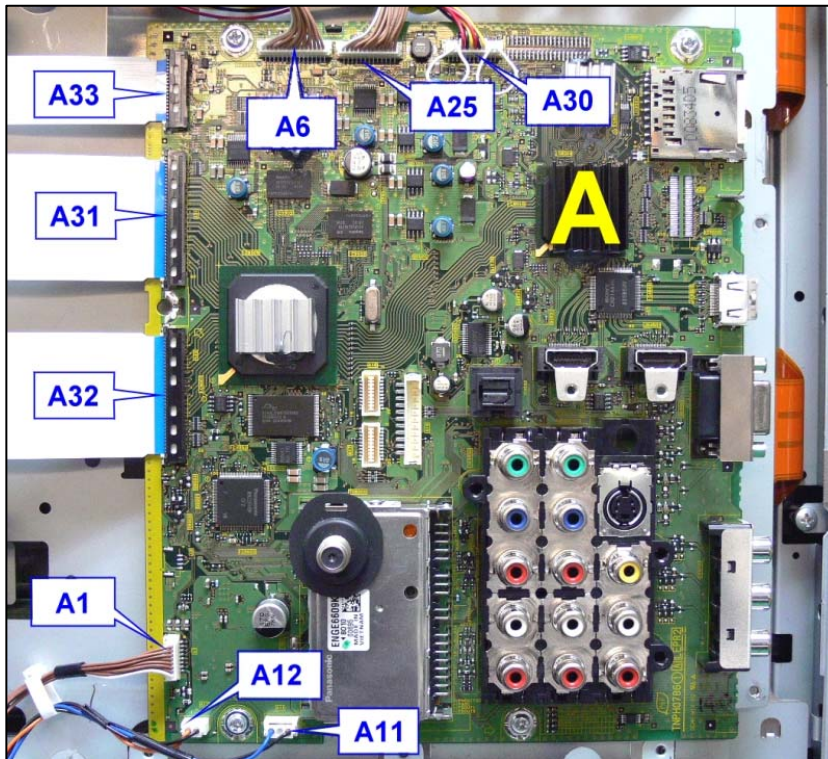


12 Blinks Error Code Flowchart

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

Trouble Mode	Defective Board (Possibility)
Audio SOS	A Board, Pinched speaker wire, Speaker

Warning: Disconnect AC Power prior to making any disconnection or connection



13 Blinks Error Code

If the power LED continues to blink even after the TV is unplugged, press and hold the power switch on the TV for a few seconds until the LED turns off.

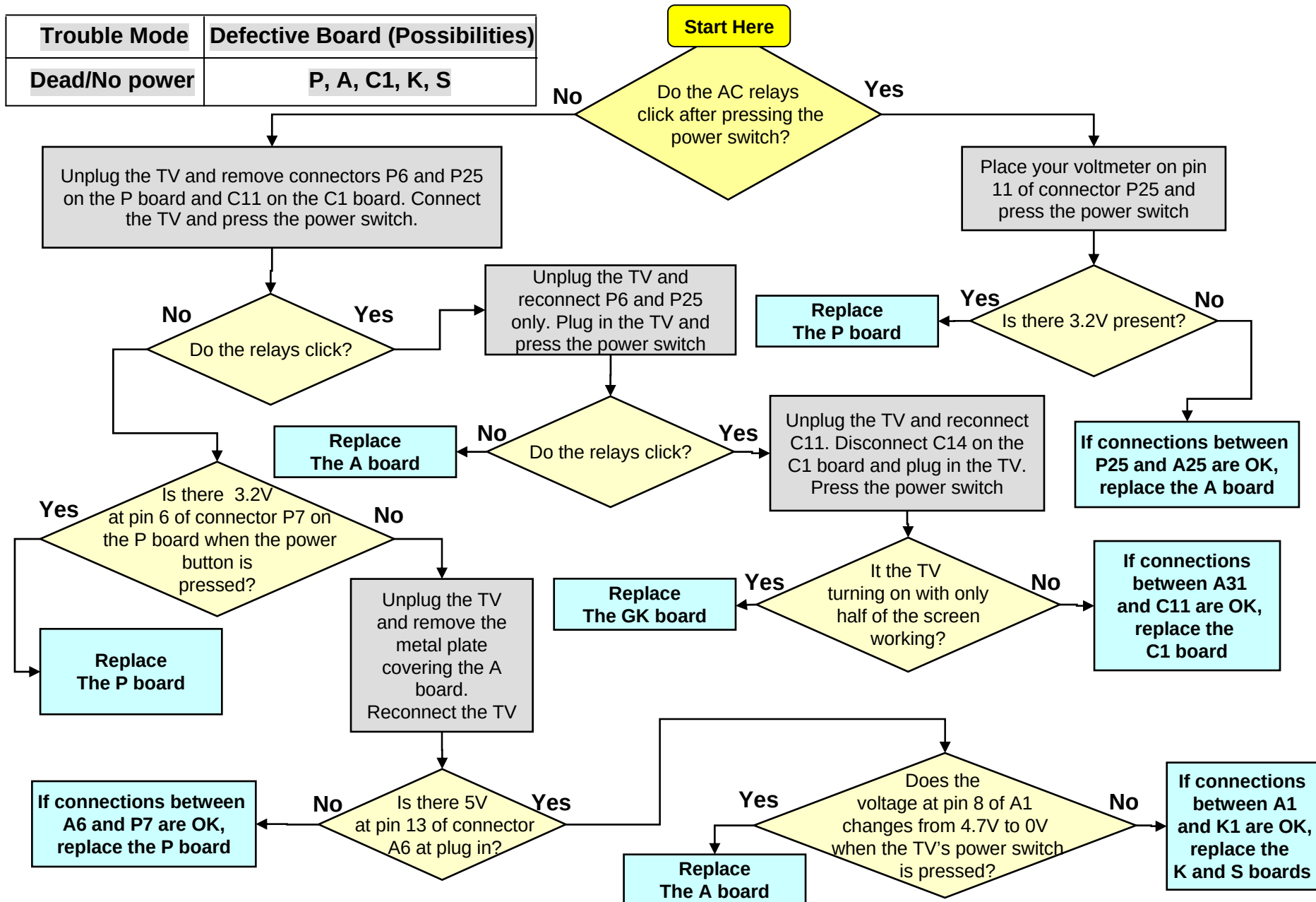
Trouble Mode	Defective Board (Possibility)
Communication Error between IC8001 and IC1100	A Board

Warning: Disconnect AC Power prior to making any disconnection or connection

Replace the A board

No Power Flowchart

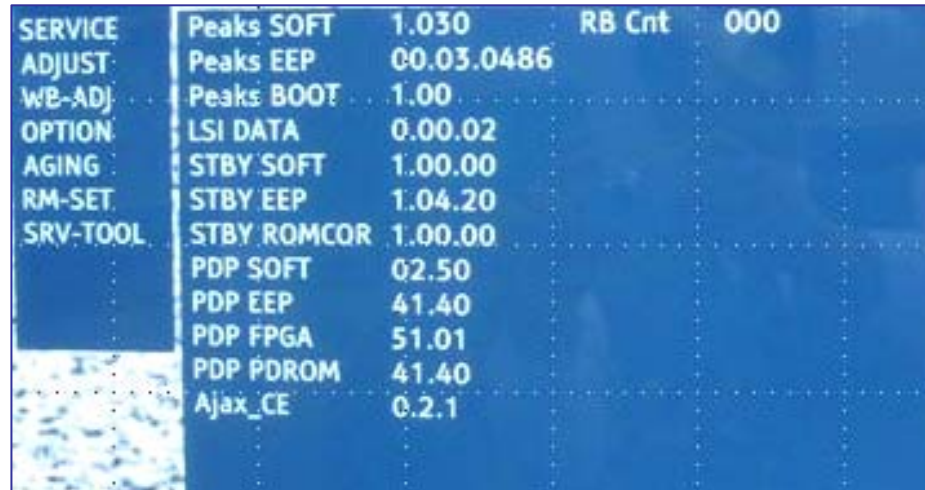
Trouble Mode	Defective Board (Possibilities)
Dead/No power	P, A, C1, K, S



Service Mode

To Enter the Service Mode:

While pressing [VOLUME (-)] button of the main unit, press [INFO] button of the remote control three times within 2 seconds.



SERVICE	Peaks SOFT	1.030	RB Cnt	000
ADJUST	Peaks EEP	00.03.0486		
WB-ADJ	Peaks BOOT	1.00		
OPTION	LSI DATA	0.00.02		
AGING	STBY SOFT	1.00.00		
RM-SET	STBY EEP	1.04.20		
SRV-TOOL	STBY ROMCOR	1.00.00		
	PDP SOFT	02.50		
	PDP EEP	41.40		
	PDP FPGA	51.01		
	PDP PDRAM	41.40		
	Ajax_CE	0.2.1		

Key command

- [1] button...Main items Selection in forward direction
- [2] button...Main items Selection in reverse direction
- [3] button...Sub items Selection in forward direction
- [4] button...Sub items Selection in reverse direction
- [VOL] button...Value of sub items change in forward direction (+), in reverse direction (-)

How to exit:

Switch off the power with the [POWER] button on the main unit or the [POWER] button on the remote control.

Self Check

1. Checks the communication IIC bus lines

To Access the Self-Check Mode: Turn the TV on and while pressing “VOLUME (-)” button on the main unit, press the “OK” button on the remote control for more than 3 seconds.

DISPLAY	Ref. No.	Description	P.C.B.
PEAKS	IC8001	Peaks-AVC	A-Board
TUN1	TU8300	TUNER (PLL block)	A-Board
TUN2	TU8300	TUNER (MTS block)	A-Board
FE	IC8300	FRONT AND PROCESSOR	A-Board
AVSW	IC3001	AUDIO/VIDEO SW	A-Board
ADV	IC4510	ADV7471 (ADV7496)	A-Board
ADAV	IC4510	ADV7471 (ADAV4622)	A-Board
GenX	IC1100	SYSTEM MPU	A-Board
MEM1	IC1101	EEPROM (SYSTEM MPU)	A-Board
MEM2	IC8502	EEPROM (Peaks)	A-Board
TEMP	IC4800	TEMP SENSOR	A-Board
PANEL	IC9003	PANEL MICOM	A-Board
GC6	IC5100	GC6	A-Board

TV volume down & OK on remote only does a basic IC self check. It does NOT clear any unit settings.

It does not clear channel programmed settings, picture settings, channel labels, LOCK mode settings, or password.

Using this method, it shows the unit firmware version (Peaks 1.050 and GenX 1.00) and it checks IC communications ONLY.

This is more useful to identify the firmware version without having to decode the info in the setup menu About/Version screen.

To Exit the Self-Check Mode: Press and hold the Power button on the TV for 5 seconds or disconnect the AC cord from the wall outlet.

Reset Procedure

Note: All customer programmed parameters will be erased.

Reset forces the TV to factory shipment setting.

To reset the TV:

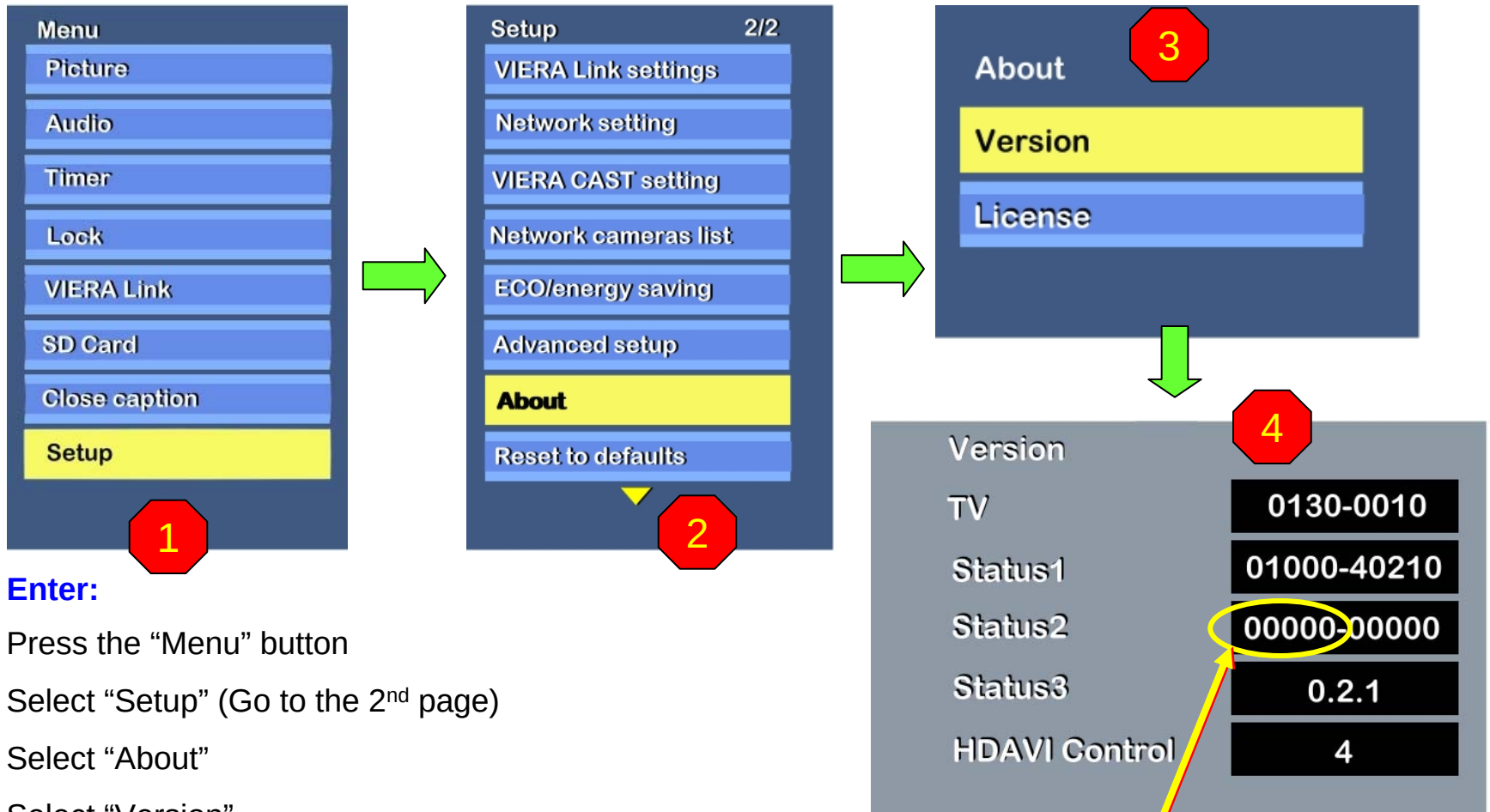
Press and hold the “VOLUME (-)” button on the TV and press the “MENU” button on the remote control for more than 3 seconds.

To Exit:

Disconnect the AC cord from wall outlet.

SOS History

A history of SOS occurrences can be found under the Version Menu.



To Enter:

1. Press the "Menu" button
2. Select "Setup" (Go to the 2nd page)
3. Select "About"
4. Select "Version"

The first 5 numbers out of the two 5-digits groups to the right of "Status2" are used to determine the SOS history.

0	0	0	0	0
Latest	last	before last	After shipping, Sec. times	After shipping, First. times

Diagnostic Method for Troubleshooting PDP Television

1. There are two kinds of picture problem

- 1) Abnormal picture
- 2) No picture

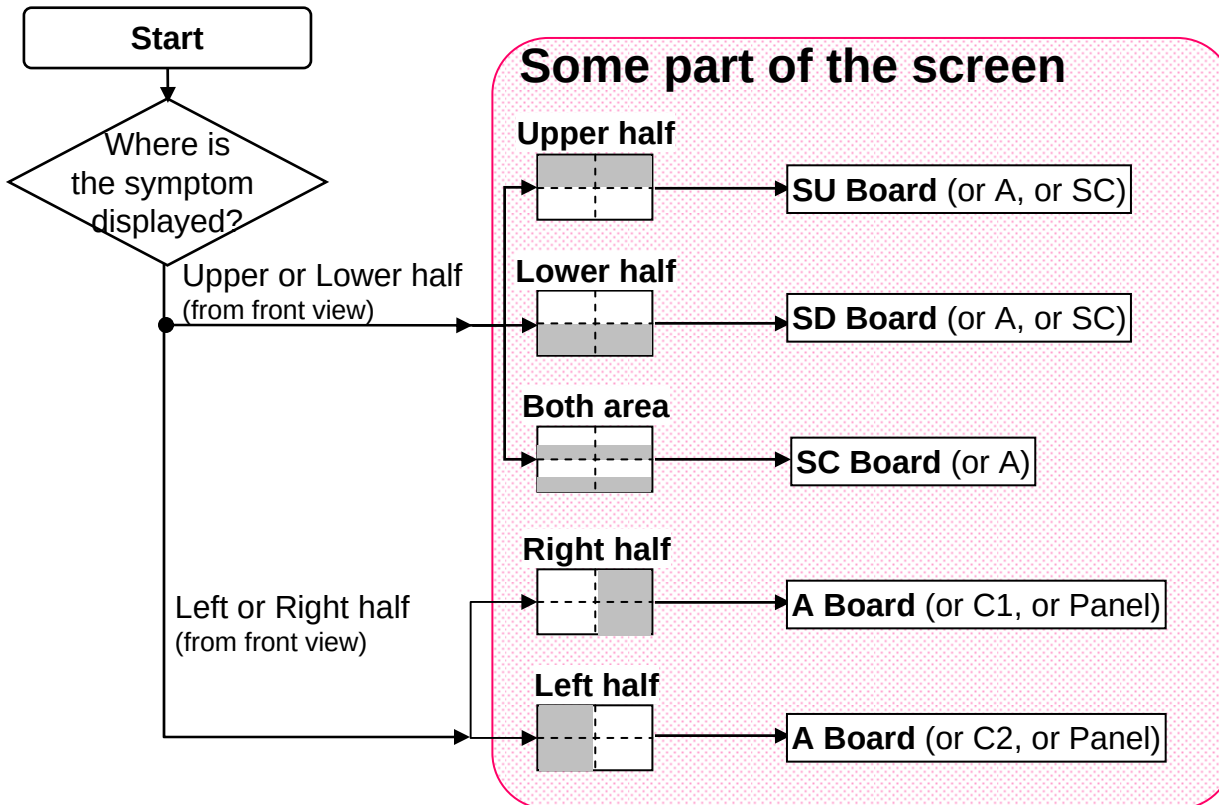
2. Basic concept of determining the defective board

- 1) Which area is the symptom displayed on the screen?
 - A. Part of the screen
 - B. All over the screen

3. Adjustment after PCB exchange

- 1) After exchanging the following boards, voltage adjustment is required.
P board, SC board, SS board => Please refer to “Service Manual”.

Picture Problem Troubleshooting



***Note :**Panel gas leakage



Because of a very small crack in the panel, gas leakage will start. In this picture, gas leakage started at the left top corner. Finally, gas leakage will lead to the symptom **“No picture with buzz noise”**.

The End